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Air Chief Marshal Sir John Willis KCB CBE RAF Vice Chief of the Defence Staff (*left*) with the Surgeon General Surgeon Vice Admiral A L Revell QHS following the unveiling of the plaque to mark the formal opening of the Royal Naval District Hospital Unit Derriford on 12 April 1995

Editorial

Screening for Colorectal Cancer in the Royal Navy

There are five essential criteria that must be met before screening can be considered worthwhile Firstly the disease must represent an important public health problem causing substantial morbidity and mortality secondly the natural history of the disease must allow early detection at a pre malignant or asymptomatic phase thirdly the screening test must be sensitive and safe and exclude those who do not have the disease fourthly a high compliance is necessary and finally the cost of screening must be comparable to the money saved by preventing the disease or treating it early

As witnessed by its application of the PULHHEEMS system the Royal Naval Medical Service has a long standing belief in the concept of early diagnosis as part of preventive medicine But could more be done for example by introducing screening to detect colorectal cancer at an earlier stage and thus bring patients to treatment sooner? In this edition Surgeon Commander Cripps ends his paper on screening for this disease by seeking the views of medical officers I hope this appeal does not go unheeded

While the number of cases reported may seem small just 16 in 18 years each means a lot to the individual concerned — and for those who care for them The fact that as Cripps reports the rate of removal of colonic polyps from Royal Navy personnel is already far higher than in the other Services suggests that we are already achieving an improved prognosis for Royal Navy personnel by the use of colonoscopy and flexible sigmoidoscopy It is a logical extension to consider whether we should seek to identify individuals at risk of developing cancer by some mechanism of screening

Debate is one thing but at the end of the day any proposal implementing screening must be judged against the criteria mentioned above Of interest in the debate as regards the Services is that we can include employment costs in the assessment of the validity of such a project and thus may alter the balance within our environment

It remains the case however that many of the patients in Cripps paper had symptoms for a considerable period prior to diagnosis and it remains axiomatic that people with rectal bleeding need to have the cause of that bleeding explained and the resources that we have at the moment must be used in such a way that patients disease remains a high priority

R F Dale FRCS
Surgeon Commander RN
Professor of Naval Surgery

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Updates

'. . . As one door closes . . .'

On 15 Mateh 1995 the offieinl elosing ceremony foi RNH Plymouth took pinee It mnrked the end of a Naval hospital whose buildings and fabrie were imbued with the wnrmth nnd friendliness for whieh it wns so renowned Even the sternest individnals seemed to mellow ns they took np their Plymouth appointments and drafts We must not Tnl to cnrry that same spirit north to the RNDHU at Derriford enst to the enhaneed Royn1 Hospital at Hnslar and sonth to the new RNSQ nt HMS *Drake*

Dnring this pernod of great change for the Defence Forces and their medical serviees opportnnities have presented to allow realisation of some of out outstanding aspirations These include the commitment of RFA *Argus* as FCRS nnd the conseqnent agreement to exercise regularly in that secondary operntion1l role the increase in size nnd range of specinlt ies at Haslar including the bnilding of n hyperbaric facility linked to its intensive care facilities the rebuild nnd enhancement of sick qnarters at HMS *Drake* and HMS *Rooke* the harmonisation of Terms and Conditions of Service for medical dental and nnrsing offieers of the three Services and an nrgent debate on their respeetive technician branches the preparation for integration of MAA(Q) with MAs the embedding of onr manpowet planner within the Naval Manpower authority and the transfer of management of our individual reservists to the Officer Mobilisation Section Other initiatives offering potential benefits which have been snpported inelnde Naval nites and badges of rnnk for QARNNS officers the transfer of DRPS to the DERA by 1996 the formation of the Dental Snpport Agency which will becnme the largest employer of dental staff in the UK and the agreement to the new appointment of a Triservice Dean who will inter alia continue developing clover relationships with the relevant Regionnl Deans Ethical oversight of clinieal research has been linked more closely to local requirements and the shape of future support from the RNPRC has reeently been agreed In nddition contributions have been made to issnes which have exeited medi1 interest including the RN initiative now agreed on a Triservice basis to warn Servicebexers of the effects of he id injnries nnd offer regnlar monitoring nnd snpport continuation of support to PTSD snfferers and their families snpervision of the statistieal requirements associated with the RN voluntary trial for drug testing and Divisional advice to tribunals on the pregnancy issne

On the personnel front we continue our support to the Officers Study Group nnd the Ratings Core Study Group nnd awnit the implieations of the Betts Review Budgetary issues inclnde responses to the Market Testing nnd Competing for Quality initiatives rel ti onship with the internal market nnd the HLB contribution to giffieiency measures and savings targets

In short every aspect of the RNMS has snffered exposure to the breath of ehange and there nre some major implications The nniformed manpower reductions will result in an ncreased civilian/Service staff ratio in sick

bays ashore and some rationalisation of traditional staff structures and modes of delivery of primary care. The timescale for the enhancement of Haslar is ambitious yet critical to the successful migration of patients and staff following the closure of the Army and RAF Service hospitals. In the short term the underpinning in some key specialities will require support from RNR volunteers and individual reservists if the operational commitment is to be met and if that support is to be sustained a national commitment to the deployment of our Volunteer Reserves. Many of these changes appear to threaten those things we hold dear — our professional standards in training and the delivery of care, our perception of overall operational sustainability and our maritime medical ethos — yet it is my strong belief that out of this period will come a new sense of purpose and determination — and we must succeed.

A Craig
Surgeon Rear Admiral
Medical Director General (Naval)

Maintaining high standards

The ship was very strictly blacked out and any transgressors had their cabin portholes nailed shut. To our secret delight a matron on board received this treatment. Thus one Ex QARNNS Sister remembers passage in a troop ship across the Pacific at the end of WWII. Dodging Japanese submarines however appeared to be nothing compared with dodging the numbers of people wanting to share the Sister's tea and sugar rations!

Fortunately for the currently serving Matrons none now need to hide their light — either behind a scuttle or beneath a bushel.

Preparing for the operational role in 1995 is rather different from 1945 and work is going ahead on developing a programme of training and exercises both ashore and afloat which will be relevant to each individual's specific operational billet and which will also reinforce the maritime aspects of QARNNS role and function.

The starting point for officers is the revised New Entry Nursing Officer Course at BRNC Dartmouth which includes greater familiarisation with ships and practical leadership tasks based on aspects of the Combat Casualty Care Course. Whilst the New Entry Course comprises of Medical, Dental and Nursing Officers, there is a much closer liaison with the other officers on course at Dartmouth, this allows a greater dissemination of knowledge between Course members and a greater understanding of each Services' branches and working practices.

Nurse ratings have had greater emphasis placed upon preparing for their operational role during Leadership training. This will now be expanded during the exercises which will be specifically designed to familiarise all QARNNS

and other Medical Branch personnel with their operational environment.

On the nursing front all qualified nurses must from 1 April 1995 provide written evidence of mandatory professional updating and during the next three years all will be given personal information of their professional requirement for notification of practice when they next re-register. These requirements by the Statutory Body ensure that patients and clients can be

cent dent that the UK registered nurses are n n only competent bnt np to date with innovations in patient care

As MDG(N) has said in his article we are beginning to see how all the changes imposed npon the RN Medical Service will evolve into the provision of patient care after 1 April 1996 Although QARNNS will be about half the current size the high standards of patient care will be maintained

It is interesting to note that in 1896 there were 24 Nursing Sisters in 1946 there were 84 Regular Nursing Sisters and in 1996 there will be 45 Nursing Officers In 1946 there was a very great reliance npon the Nursing Sisters of the Reserves and in the future we too will depend npon our colleagues in the QARNNS Reserve There will be many more combined training and exercise programmes utilising QARNNS personnel of both the regular and reserve services Again we believe that everyone has experience expertise and knowledge which can be utilised for the benefit of all

There are many events planned to commemorate the 50th anniversary of the end of WWII and retired QARNNS officers and VADs who were serving at that time will be representing the Service in various locations Listening to and reading about their exploits is both fascinating and humbling as always the maintenance of standards against all odds the flexibility stamina and sense of humour shine through their stories — as does the normalisation of the most abnormal situations

It is likely that many of the qualities shown by our predecessors will be required during the preparation for and the transition to the new era of care provision next year Although for some redundancy will be a most unwelcome reality for others it will be the start of a new life and for those who remain in the Service the example of our predecessors give us a proud identity as QARNNS with which to face the future

C M Taylor RRC
Matron in Chief
QARNNS

The Royal Naval Dental Services — Present, past and future

I am not a believer in astrology but were I so I am sure that I would be aware that whatever star it is which shines npon the Royal Naval Dental Services is in conjunction with just about everything else in sight! Be that as it may during my first few months in office as Director of Naval Dental Services the past present and future of the RNDS seem to have been highlighted in a way which must convince even the most insensitive among us that we are at a significant crossroads in the history of the Branch

The Present

On 22 January 1995 the RN Dental Services became the first of the three Armed Forces Dental Branches to celebrate its 75th Anniversary The occasion was marked by a dinner on 20 January at HMS *Nelson* As well as about 120 dental officers past and present the dinner was also attended by Admiral Sir Jock Slater Vice Chief of the Defence Staff Mrs Margaret Seward President of the General Dental Council Surgeon Rear Admiral Sandy Craig Medical Director General and Mr Timothy Fletcher grandson of our founding father Surgeon Rear Admiral (D) E E Fletcher

This occasion which was much enjoyed by all who attended was also marked by the publication of a History of the Dental Branch written by Surgeon Commander (D) Nick Daws and Surgeon Captain (D) John Holland This book covers events up until 1964 and is reviewed elsewhere in this issue

The Past

The story post 1964 will undoubtedly give rise to a further good read in we hope the not too distant future It will show that alongside our medical colleagues many dental personnel served in a series of Naval and Royal Marine operations ranging from the Indonesian Confrontation in the mid 1960s Northern Ireland Operation Corporate in the Falklands

Armilla Patrols and Operation Granby in the Gulf Operation Haven in Northern Iraq Operation Grapple in the Adriatic and in late 1994 the Spearhead deployment of 45 Commando to Kuwait The rest of our time has been spent in keeping the men and women of the Royal Navy and Royal Marines dentally fit to meet the operational requirement and reacting to an almost continuous series of studies designed to examine our cost effectiveness or even our necessity[1]

The Future

DCS15 reported No significant savings to be found in the RNDS and its sister Services Our fate was however sealed by a political thrust for further cost effectiveness by creating Defence Support Agencies out of the support services of the Armed Forces

Since publication of the DCS reports in July 1994 planning for the proposed Defence Dental Care Agency (DDCA) has progressed and assuming that Ministerial approval for these plans is received it is likely that the DDCA structure will be based on a geographic regional system It is proposed that each region which may in some areas cross Inter Service boundaries be under the control of a Regional Dental Officer (RDO)

The RDO a senior officer of (usually) Captain rank will be responsible for both clinical and management audit within his region He will also spend part of his time in clinical practice In the case of the Navy because RN and RM personnel are concentrated in port areas it is likely that most RN dental activity will be under the control of Naval RDOs

From 1870 to the present day dentistry in the Royal Navy has evolved through a process of continuous review and change To those of us currently serving some of this may seem cataclysmic From the broader viewpoint of Branch history over more than 75 years it is all part of the normal process

To quote a line from a paper which crossed my desk the other day Change is here to stay![1] Our job now as in the past is to make it work!

F J Grant
Surgeon Commodore (D)
Director Naval Dental Services

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Recent advances

Tuberculosis in the Royal Navy

J J W Sykes

INTRODUCTION

Current guidance on the management of tuberculosis in service personnel is recognised as being out of date In particular the Mass Miniature Radiography Service no longer exists The guidance is further compromised by lack of detail in defining contacts contact tracing and management of those contacts The precise date of origin of the current guidance cannot be established and therefore its relevance to the present problem must be questioned since significant changes have taken place in the demography of the disease both within the RN and in the United Kingdom To address these problems new guidance has been formulated and introduced recently

AIM

The aim of this paper is to review the occurrence of tuberculosis in the Royal Navy and the United Kingdom assessing the risk to service personnel and to outline recently introduced guidelines for the control and management of the disease and its prevention

THE TUBERCULOSIS PROBLEM

a In the United Kingdom

Tuberculosis is a disease undergoing significant change in its means of presentation to today s medical practitioner While still the commonest cause of death worldwide (three million p a) it has become a relatively rare disease in the United Kingdom seldom seen or diagnosed by the majority of doctors Tuberculosis is a legally notifiable disease in UK an obligation from which the Armed Forces are not exempt [1] Notifications of the disease fell at a rate between 3% and 9% between 1954 and 1987 In 1974 some 120 000 notifications were recorded compared to about 5000 in 1987 However there has been an unexplained rise of about 2% annually between 1987 and 1991

National immunisation policies and health surveillance in the form of Mass Miniature Radiography as well as routine chest x rays may have contributed to the overall national decline It has been estimated that to prevent a single case it was necessary to immunise some 3600 individuals in 1989 compared to only 460 in 1969 [2] The question of cost effectiveness of immunisation has therefore been raised by some Health Authorities which no longer support immunisation of schoolchildren However as indicated TB is a disease which is once again on the increase drug resistant forms are emerging and it is becoming well recognised as an opportunistic infection associated with compromised immune responses particularly in patients with HIV infection

While the traditional risk factors to the UK population responsible for the perception and social stigmata of the disease of poverty poor housing and overcrowding have been overcome there is some evidence to support the re-emergence of these factors in some quarters of the population [3] It is also recognised that immigrants from the Indian Sub Continent (ISC)[3] may also be high risk groups Health care workers (HCWs) were perceived as being at greater risk but recent evidence suggests this is no longer the case [3] Guidelines for the management of HCWs have been issued by the Department of Health[4] but more up to date procedures have recently been recommended by the Joint Tuberculosis Committee of the British Thoracic Society [5]

Surgeon Commander Sykes is Director of Health (Navy) on the staff of MDG(N) and Professor of Naval Occupational Medicine

b In the Royal Navy

Social conditions within the service have changed as radically as those in the civilian sector in the past thirty years With the passing of National Service the naval population has fallen from 93 000 in 1960 to about 50 000 men and women in 1994 with further significant reductions planned by the end of the century Living conditions at sea and in shore establishments have also improved dramatically in the same period These changes should be taken into account in assessing the risk to naval personnel of contracting and spreading the disease

There are two sources of information available on the occurrence of tuberculosis in serving personnel The first in the form of reports to the Local Authority Proper Officer and the local Naval Medical Officer of Health (NMoH) shows that for 1993 and 1994 there were two and five cases respectively Sadly returns from previous years via the NMoH(Portsmouth) are no longer available

A second source of information is the TRIMEDS system and the Health of the Navy Tables This information is limited in its scope to those cases which required a hospital admission of 48 or more hours It does not record notifications Changing medical practice with marked reductions in the duration of in-patient episodes will therefore underestimate the true prevalence of the disease

Notwithstanding gaps in the level of knowledge of the disease in the service it appears that the problem is not large nor causing significant morbidity Nevertheless the changing nature of the disease as it presents to the late twentieth century Navy may lead to complacency and thus the risk of under detection rises with consequent problems for naval health authorities

PREVENTION

Direct methods of assessing immunity to TB do not exist Thus indirect methods such as Heaf and Mantoux testing were developed Each exposes the individual to Tuberculin Purified Protein Derivative (PPD) which has similar antigenic quality to the tubercle bacillus but no infective properties A significant reaction therefore confirms that the individual has at some stage developed cell mediated delayed hypersensitivity However a similar response will be obtained from an individual with active disease previously active disease or who has been immunised Despite this poor specificity it has been estimated that about 70% of those given immunisation as BCG have immunity [4]

Correct administration of the Heaf test requires training and skill in the administration of the PPD reading and qualitatively assessing the reaction The Heaf test itself and unskilled administration of BCG also carries the risk of severe reactions and these do occur from time to time with considerable associated morbidity loss of costly training time and pain and discomfort for the individual under training

The value of pre-employment health screening of at risk staff for pulmonary tuberculosis has recently been questioned [5 6] Heaf testing of HCWs at pre employment screening in accordance with British Thoracic Society (BTS) guidelines [5] resulted in chest x rays being taken in 36% of prospective employees No active disease was found No difference in Heaf test results were seen in those with or without evidence of previous BCG vaccination Another study suggested that up to 70% of prospective NHS staff required chest x ray if the BTS guidelines were followed [14] Audit of 448 consecutive recruits to HMS *Raleigh* who had had Heaf Testing revealed that 71 received chest x rays All 71 were reported as normal (P Jones personal communication) These studies highlight the lack of return for the cost the risk of radiographic screening and the inability of Heaf testing to select potential employees most at risk of introducing active tuberculosis Revised guidelines [6] for pre employment screening are based on the response to a health questionnaire rather than Heaf testing to identify the at risk employee Detailed guidance is given on the management of prospective employees

Table 1 Episodes of tuberculosis in the Royal Navy

1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	
8	6	4	7	3	4	1	1	0	0	0	0	Male
1											1	Female

CONTACT TRACING

Smear positive pulmonary tuberculosis is considered infective whereas smear negative pulmonary disease and non pulmonary tuberculosis is not normally considered infective. Approximately 10% of close contacts of a sputum smear positive case will develop disease while close contacts of sputum culture positive smear negative cases have a much reduced risk of developing disease (2.8% ISC origin 0.5% white) [3]. Thus when a case of active pulmonary tuberculosis is diagnosed it is necessary to identify contacts, diagnose, treat and contain further transmission of the disease. The importance of these measures emphasises the requirement to report service cases to the local authority Proper Officer to ensure that non service contacts such as dependants are correctly followed-up and referred to chest physicians. Current management of contacts includes chest x ray, checks on immunisation status, the use of chemoprophylaxis and regular follow up for up to two years.

By contrast casual and occupational contacts are generally considered to have a very low risk of developing disease. As previously indicated this now includes HCWs.

Current service guidance on contact definition and tracing is particularly unhelpful to the majority of service medical officers who will have little or no personal experience of the procedures required. This is addressed in the latest guidance.

THE CURRENT RISK

In the naval context the risk of acquiring tuberculosis is likely to be similar to the general population as there are no specific risk factors associated with the naval service at large which might influence the prevalence of the disease. However those who may be at a potentially higher risk are defence staff and their dependants serving in countries where the disease is endemic and who thus come into frequent close contact with an infected population. By contrast during a ship visit to an endemic area personal contact with the potentially infected local population is likely to be short and casual in nature, and is unlikely to result in infection. Such visits are therefore considered to constitute a very low risk.

THE FUTURE

Notwithstanding this apparent low risk of developing tuberculosis in the Navy, the prevention of communicable disease in the service population remains as important today as it ever was if the Naval Medical Service is to maintain health and prevent disease. Prevention policies must take into account changing patterns of disease and must be tailored accordingly to remain effective within justifiable costs. As a consequence of the reduced risk it would clearly be unjustified to continue to support prevention policies which belonged to another era and one when the risk of acquiring the disease was significantly greater than today. For this reason the Royal Navy has recently introduced a substantially modified policy on the prevention of tuberculosis using the latest British Thoracic Society Code of Practice as a template. To ensure that the possibility of too relaxed a stance is avoided pre employment screening procedures have been applied to officer and rating entries which mirror those recommended for HCWs. Health questionnaires have been found to be more effective than estimating responses to Heaf testing in identifying potentially infected persons. New recruits will be screened by Naval Examining Medical Officers prior to entry and again at their entry establishment. Specific information on subsequent inoculation policy is also given and greater emphasis is placed on the recording of findings and actions taken. Thus in the longer term it may be possible to relate outbreaks (or cases) to entry conditions.

Similarly guidelines for the follow up of contacts and their management have also been adopted and detailed guidance given in service instructions. The obligation to report the occurrence of disease has been emphasised and reporting procedures have been modified to ensure better management of patients and their contacts.

Importantly the requirement to audit the effectiveness of the new measures has been introduced. This should serve to measure the effectiveness of the BTS Code of Practice in the Royal Navy in the longer term while providing the ability to monitor the effectiveness of prevention and where this fails contact tracing and follow up in the few cases which occur. In the relatively small service community this capability should be an effective weapon of control. Recent technical developments in the ability to type tuberculosis also add an intriguing dimension to the epidemiology of the disease and will undoubtedly help to identify those cases which represent true spread rather than reactivation of pre existing disease [4].

ACKNOWLEDGEMENTS

The author is indebted to Surgeon Commanders R J Clark A R O Miller P I Raffaelli and C Pipkin for expert advice and comment in the preparation of this paper

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Operational medicine

Radio Medical Advice — the Danish experience

H H Strange-Vognsen and N Knudstorp

Abstract

From 1980 to 1993 the Danish Radio Medical Advice Service (RMAS) had 1136 contacts from overseas Danish merchant ships and 213 contacts from Danish territorial waters The diagnoses were almost always of acute conditions The distribution of the diagnoses in the overseas contacts were diseases in the digestive and genitourinary system 30% traumatic lesions 23% infectious diseases 14% and diseases in the cardiovascular and respiratory system 9% The only trend over the years was a significant (P=0 01) decrease in psychiatric diagnosis Evacuation from the ship was recommended in 53% and medicine was prescribed in 61% of the contacts The medicine was antibiotics in 40% and analgesics in 29% of the contacts Intravenous infusion was calculated as relevant in 5% of the cases and this procedure will be included in the new education of officers on the ships

In the contacts from Danish territorial waters where many ships are recreational yachts evacuation was recommended in 79% and medicine was prescribed in 28% of the contacts This was probably due to the short distance to the nearest harbour and the variation in medical equipment and knowledge The medical specialty for doctors participating in RMAS should be general surgery or orthopaedic surgery but access to advice from all other medical specialties should be available Experience as a naval medical officer would be beneficial The education of the officers on the ships should be more comprehensive including e g intravenous infusion Communication should be by telephone and television would be an advantage

INTRODUCTION

Radio Medical Advice Service (RMAS) via Lyngby Radio to Danish ships all over the world is a medical challenge The total number of people employed in the Danish merchant marine was approximately 14 500 in 1980 falling to 7 800 in 1987 and then increasing to 12 300 in 1993 While Danish seamen will have an acceptable health certificate less than two years old they may fall ill or be injured while serving In such circumstances RMAS assistance may be sought

By tradition most of the Danish fishing fleet calls for RMAS via the local coast radio station and is referred to the local hospital Danish officers on foreign ships can use RMAS via Lyngby Radio as well as officers on Danish ships who can also get RMAS from other sources including the medical officers on inspection ships from the Royal Danish Navy in the North Atlantic In case of emergency in Danish territorial waters the Danish Rescue Coordination Centre (Royal Danish Airforce) can send a rescue helicopter or direct request from the ship

The telephone call or radiotelegram to the Danish RMAS is via Lyegby radio connected to the casualty ward in Rigshospitalet (State University Hospital) and is attended by the senior registrar on duty in the orthopaedic department

Officers on the ships have had up to 102 hours of medical education and three to seven days of optional practical training in a casualty ward In the past training has been directed towards making a diagnosis and starting the treatment on their own The new revised education just about to start is based on a directive from the European Union regarding minimum level of training of seafarers and teaches the officers to take the history and examine the casualty then consult with RMAS before the diagnosis is made and treatment is started The new education is more comprehensive and includes initiating and managing intravenous infusions Re-education of senior officers and repeated repetition courses have been planned [2]

Both authors are employed in the Orthopaedic Department Rigshospitalet (State Hospital) Copenhagen Denmark

Except for smaller yachts for recreational sailing the ships have drug cabinets of three types[3] containing several drugs bandages some surgical instruments and also a medical book for seamen[4]

On the basis of 1 136 medical contacts from overseas waters and 213 contacts from Danish territorial waters in 14 years to RMAS via Lyngby Radio we tried to answer the following questions

Is there a change in the diagnostic pattern over the years?

What type of medical education is relevant for the doctors participating in RMAS?

What type of medical training is relevant for the officers on the ships?

METHODS

The study was based on the standard form used for communication between ships and the doctors of the RMAS This may be used for radiotelegram or for direct communication by telephone The doctor s consultation fee depends on a proper record on the form The communication was more often by telephone in the last part of the period

An earlier investigation[5] has shown that overseas calls to RMAS were almost exclusively from the Danish merchant marine while calls from Danish territorial waters come from all kinds of ships including smaller ships with different medical equipment and education In this survey we have placed calls in one of two categories depending on the position of the ship Where the nearest harbour to the ship was Danish the call has been classed as Danish territorial waters Calls from all other positions were classed as Overseas waters

The diagnoses were classified on the basis of the International Statistical Classification of Diseases and Health Related Problems[6] and the type of medicines prescribed grouped according to Anatomical Therapeutic Chemical Classification System The mode of administration was noted

Patients were classified as having been evacuated if transfer from the ship had to occur earlier than had been planned e g by seeking the nearest harbour They were similarly classified if the call was from a ship in harbour and the patient had to leave the ship for medical reasons To assess the need for ships' officers to be taught how to establish an intravenous infusion an evaluation of the clinical information on the form was made to assess which patients might have benefited from that treatment had it been available to them In some cases there are several calls (and forms) about a patient s single episode of illness or injury For the study these were analysed together for each case

To assess whether there had been a change in the pattern of disease injury or treatment over the years the information for 1980-86 and 1987-93 was analysed separately and compared

RESULTS

Calls from overseas waters

A total of 1136 cases from overseas waters were dealt with by the RMAS between 1980 and 1993 with an average of 81 per year and a range of 57-105 There was a trend towards fewer contacts in the late eighties

Table 1 Diagnoses from 1136 overseas contacts (*significant difference $P = 0.01$)

Diagnoses and ISCD number	*1980-86 average per year*	*1987-93 average per year*	*Total 80-93 average per year (range)*
Gastrointestinal and genitourinary system K00-K93 and N00-N99	30%	30%	30 (21-37)%
Lesions poisonings and damage following external impact S00-T96	23%	23%	23 (13-33)%
Infectious diseases A00-B99	14%	15%	14 (6-23)%
Cardiovascular and respiratory system I00-I99 and J00-J99	10%	9%	9 (3-16)%
Psychiatric disease F00-F99	8%*	2%*	5 (0-12)%
Other and unknown diseases	15%	22%	18 (5-30)%

The distribution of diagnoses is shown in *Table I*. Nearly all of the contacts concerned acute disease or injury. Due to the uncertain way the diagnosis was made diseases in the gastro-intestinal and genitourinary system were grouped together and in the same way diseases of the respiratory and cardiovascular system. There were 215 traumatic lesions: head and neck 29% arm 15% hand 24% thorax 3% abdomen loin and pelvis 11% leg 9% foot 6% more than one region 2% and unknown region 0%. As indicated by the range of proportion of all diagnoses made up by the sub classifications there was a great variation in the diagnoses from year to year. But when the average for the first and the last parts of the period (that is 1980-86 and 1986-93) are compared the distribution of diagnoses is fairly constant. The only significant difference is a decrease in psychiatric diagnoses ($P=0.01$ Poisson distribution) from 8% in the first to 2% in the last part of the period. The number of unknown and other diagnoses increased from the first to the last part of the period.

Evacuation was recommended in 53% (range 42-67) of the cases per year. Medicines were prescribed in 61% (range 44-71) of the cases per year and parenteral administration was recommended in 9% (range 0-18). Requirement for IV infusion was found to be indicated in 5% (range 0-9) of the cases per year. We found no difference between the first and the last part of the period.

The number of drugs prescribed was 59 (range 35-80) per year. Of these antibiotics formed 40% (range 28-60) morphine and morphine like analgesics 18% (range 8-33) other analgesics 11% (range 2-16) drugs acting on the central nervous system 11% (range 1-22) and miscellaneous other drugs 20% (range 11-32). The only significant difference between the first and the last part of the period was a decrease in drugs other than analgesics acting on the central nervous system ($P=0.05$ Poisson distribution).

Calls from Danish territorial waters

From 1980 to 1993 213 calls came from Danish territorial waters varying from three to 25 calls per year. This includes three calls from land in different parts of the world and one call from an airplane. Evacuation was recommended in 79% medicine was prescribed in 28% and intravenous infusion was needed in 4% of the cases. The diagnostic distribution was as follows:

diseases of the digestive (K00-K93) and genitourinary system (N00-N99) 21%
lesions poisonings and certain other damages following external impact (S00-T98) 34%
infectious diseases (A00-B99) 6%
diseases of the cardiovascular (I00-I99) and respiratory system (J00-J99) 14%
psychiatric diseases (F00-F99) 2%
other and unknown diseases 24%

There was no significant difference between the first and the last part of the period.

DISCUSSION

The number of contacts to RMAS from overseas waters seems to show the same trend as the number of persons employed in the Danish merchant marine with the lowest number in the late eighties but not all of the persons employed are actually sailing. The precise number of persons referring to the Danish RMAS is not known.

The diagnostic pattern for calls from overseas waters (*Table I*) is the same found in a Swedish investigation comprising about 500 contacts from 1965 to 1970[2] and in a Polish one representing about 500 contacts from 1970 to 1972[3]. Of the traumatic lesions 29% were to the head and neck. In the Danish fishing fleet only about 5% of the lesions were to the head and neck.[1] This difference probably reflects the different size of merchant and fishing ships: making falling objects a greater risk in merchant ships. Safety helmets could minimize these dangerous lesions. The significant fall in psychiatric diseases can be due to the increasing demands on the seamen leaving mentally weak persons on shore.

General surgery or orthopaedic surgery are relevant medical specialties because more than half of the diagnoses are acute diseases of the digestive or genitourinary system and trauma. Infectious diseases are common to several medical specialities. Internal medicine or anaesthesiology seems not relevant although the surgeon giving advice through RMAS should have access to advice from non surgical specialties. Experience as a naval medical officer would be beneficial. RMAS should be located in a major university hospital since qualified advice from most medical specialties will be available day and night. From personal experience communication by telephone is more satisfactory than by radiotelegram. The quality of the communication could probably be further improved by television showing the patient or the lesion.

Evacuation was recommended in approxi

mately one half of the contacts this is in agreement with the Swedish investigation [9] Considering that half of the contacts results in evacuation the general impression must be that contacts to RMAS are not made too often The new revised and more comprehensive education of officers on the ships may reduce the number of evacuations but hopefully not the number of contacts Evacuation is often very expensive to the ship owner

Prescription of medicines in 61% of the contacts is somewhat lower than the 77% found in the Swedish investigation [9] The reason for this difference is unclear Parenteral route of administration was recommended in 9% and requirement for IV infusion was indicated in 5% Both should be managed by officers on the ships Antibiotics and analgesics accounted for approximately 70% of the prescribed medicine This is in accordance with the Swedish[9] and the Polish[6] investigations Corresponding to the decrease in psychiatric diagnosis we found a significant decrease in drugs (other than analgesics) affecting the central nervous system

The contacts from the Danish territorial waters comprised about one sixth of the overseas contacts Evacuation was recommended more often than in the overseas contacts (79% compared to 53%) and prescription of medicine was less frequent than in the overseas contact (28% compared to 61%) Both differences could be due to the fact that the nearest harbour is close to the ship's position in Danish territorial waters As many of the contacts in Danish territorial waters come from recreational sailors another explanation for the differences could be that equipment and knowledge on these ships was of a lower standard The diagnoses in the 213 contacts from Danish Territorial waters showed the same pattern as in the overseas contacts

CONCLUSIONS

With the exception of a decrease in psychiatric illness the pattern of illness and injury prompting calls to RMAS appears to have not changed significantly over the years The pattern of disease and injury suggests that the doctors participating in RMAS should be specialists in general surgery or orthopaedic surgery with access to advice from all other medical specialities Officers on ships should be trained to manage IV infusions and action has already been taken to include this in the new training syllabus

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Clinical management

Colorectal Cancer in the Royal Navy — an opportunity to intervene?

N P J Cripps and L B Cannon

Abstract

Colorectal cancer is uncommon in Royal Naval personnel: an average of two cases are diagnosed annually often with disease advanced at presentation. During the next five years, 10 serving individuals are likely to present with colorectal cancer and many if not all of these already harbour premalignant adenomas or asymptomatic polonm malignancy. Currently over 2-000 servicemen are estimated to carry undiagnosed colorectal adenomas.

Requests for hospital appointments for those reporting a family history of colorectal cancer and who request screening are increasing in frequency. An understanding of the personal implications of a family history of colorectal cancer and a basis for the management of these individuals will be provided.

This paper considers ways in which the impact of colorectal cancer on the Royal Navy and its pensioners could be altered. Evidence derived from population based and family history based colorectal cancer screening studies are organised into a protocol by which the Royal Navy might be examined. The effect of a family history of colorectal cancer on disease incidence and the percentage of positives resulting from faecal occult blood testing are applied to the age profile of the Royal Navy. These show that a maximum of 56 flexible sigmoidoscopies and 90 colonoscopies would be needed in the first year of a programme to attempt the early detection of colorectal neoplasia.

This paper is aimed at gaining feedback from primary and second ary care practitioners so that the possibility of introducing a programme for the early detection of colorectal cancer in the Royal Navy can be considered.

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INTRODUCTION

Colorectal cancer (CRC) is a major cause of morbidity and mortality in the Western World with by far the greatest burden falling on those over 40 years of age. Although the burden of CRC in the serving age group is not large a small number of cases in servicemen do occur and seem to mostly be diagnosed at an advanced stage (*Table 1*). Most but probably not all of those who develop CRC [1] do so from the premalignant benign adenoma which is potentially detectable before malignant transformation takes place.

Personal risk of developing CRC is increased by a high fat [3] high meat[4] diet with contributions from beer drinking[5] and tobacco smoking. Evidence supporting a reduction in risk by eating a vegetarian diet and green vegetables is accumulating. Between 15 25% of colorectal cancers could be attributable to a high fat intake while a high vegetable and fibre intake will reduce risk to between one half to one third.[7] It is probable that up to one half of all colorectal cancers in developed countries could be prevented by a low fat high vegetable diet.[6] In the possession of this information RNMS health professionals dealing with servicemen may offer advice which will help to reduce personal risk of developing CRC.

The strategies available for CRC screening and the reasons why these may not produce an overall survival advantage have been reviewed recently.[7] Screening for those at average risk of developing the disease i.e. in population based studies has yet to conclusively show a survival advantage in the screened group[8 9 10] although early indications that this might be so have been published recently.[11]

Conversely because of the increased individual risk of developing CRC in those with a family history of the disease, most authorities

Table 1 Colorectal Cancer RN RM and QARNNS 1988 1992

Age at diagnosis	Sex	Dukes stage	Site of disease	Colorectal symptoms: Mex duration	Rectal bleeding	CO&H	Abdominal pain	Family history of CRC	Outcome of illness
39	M	C	Recto-sigmoid	5/12	✓	✓	✓	NR	Dead
55	M	C	Rectum	12/12	✓	✓	×	NR	N/K
38	M	B	Left Colon	9/12	✓	×	×	None	Alive
37	M	C	Recto sigmoid	9/12	✓	×	✓	1 × 1° relative	Dead
54	M	C	Right Colon	3/12	×	✓	✓	None	Terminal
54	M	D	Recto sigmoid	>1/12	✓	✓	✓	NR	Dead
18	M	C	Caecum	Acute*	×	×	✓	1 × 1° and 1 × 2° relative	Alive
51	M	C	Rectum	>2/12	✓	×	×	1 × 1° relative	Alive
48	M	A Malignant Polyp	Sigmoid	5 years	✓	×	✓	NR	Alive
51	M	B	Rectum	2/12	✓	✓	×	None	Dead
39 (44)	M	B (C)†	Sigmoid Right Colon	2/12 at 5 yr f/up	✓	✓	×	NR	Alive
48	M	B	Sigmoid	8/12	✓	✓	×	NR	Alive

Key
* Patient presented at emergency appendicectomy
† Patient diagnosed with metachronous cancer despite follow up colonoscopy
1° relative Parent or sibling
2° relative Grandparent or Uncle/Aunt etc
NR Not recorded at time of initial patient clerking

Data obtained retrospectively from 12 case records of a total of 14 cases between 1988 and 1992. Of the two unretrieved records one patient is known to have died of his cancer. In six of 12 cases, no attempt had been made to identify a family history of CRC.

now accept that secondary prevention should be offered to this group [1].

A proposal to assist with the early detection of CRC in the Royal Navy will be developed based on these concepts and on data derived from recent screening surveys. A knowledge of the proportions of individuals likely to be affected by such a protocol allows an estimation of the work load which would be generated and the costs involved in the programme.

COLORECTAL CANCER IN THE ROYAL NAVY 1985 1992

Table 2 shows the incidence of CRC in the RN RM and QARNNS for the period 1985 to 1992 and the number of days spent in hospital because of the disease (including Hospital Sick Leave) during the same period. A mean of 80 days absence from duty for each of 16 new cases is shown. Data for 1993 was not complete at the time of writing and has not been included.

Table 2 Colorectal Cancer in RN RM QARNNS 1985 1992

Year	*No of new cases*	*Total inpatient days**
1985	4	249
1986	0	0
1987	2	205
1988	4	234
1989	0	1
1990	1	155
1991	3	306
1992	2	125
Total	16	(mean) 80

Key
* Number of days not restricted to new cases

The annual incidence of colorectal cancer in the Royal Navy. The total number of inpatient days includes those spent on Hospital Sick Leave i e total absence from place of duty. [Data derived from ICD coding of hospital discharge documentation provided by The Department of Medical Statistics MoD Stanmore Middlesex.]

Although the number of affected servicemen is small five of 12 cases for whom the case notes have been traced were diagnosed before their fortieth birthday (*Table 1*) most of whom reported symptom durations of many months at the time of in patient clerking. Furthermore between 3 and 4% of individuals below the age of 50 are thought to bear colorectal adenomas by this estimate over 2 000 servicemen may be in this category at all times (*Table 3*) [3].

The cost to the Service in terms of days lost from duty is high before considering the cost of inpatient management and palliative treatment where required. The ultimate cost also includes the permanent loss of experienced personnel whose individual training costs far exceed the costs of a screening programme. The Services are singularly placed to examine the economic implications of a programme aimed at the early detection of colorectal cancer in younger age groups.

A FAMILY HISTORY OF COLORECTAL CANCER

Before considering a protocol for early detection a grasp of the categories of inherited susceptibility to CRC is essential.

1 Familial Adenomatous Polyposis

Familial risk falls into three categories of which Familial Adenomatous Polyposis (FAP) and its related syndromes are the most well known. The risk of developing bowel cancer for those affected in these pedigrees is absolute and is transmitted by an autosomal dominant gene of high penetrance carried on chromosome 5. Such cancers represent approximately only 1 % of all colorectal carcinoma. Up to 45% of FAP cases are solitary representing new mutations but once the mutation is established subsequent offspring are as much at risk as those in longer pedigrees and should be offered similar screening opportunities [4] which today is largely by genetic investigation.

2 Hereditary Non-polyposis Colorectal Cancer

The second category of familial risk may be numerically the most important group of patients at increased risk of development of colorectal cancer accounting for between 5 10% of all cases. These are named the Hereditary Non Polyposis Colorectal Cancer syndromes (HNPCC) types a and b reported by Lynch [5]. These syndromes are also known as Lynch I (HNPCCa) characterised by the development of an excess of colon cancer (site specific cancer) in close relatives and Lynch II (HNPCCb) also known as the Cancer Family Syndrome (CFS).

Table 3 Number of serving individuals bearing colorectal adenomas

Age group	*Expected % with adenoma*[11]	*Number of Servicemen at risk (RN 1992)*	*Number of adenomas expected*
<40	4	54 914	2 196
40 49	3	5 736	172
50 59	9	509	46
60 69	11	0	0
>70	10	0	0
		Total	2 414

The percentage of individuals expected to bear adenomas using figures derived from flexible sigmoidoscopic studies in 3 392 asymptomatic individuals (data taken from reference 13)

characterised by an excess of carcinoma of the breast ovary endometrium pancreas and urinary adenocarcinomas in addition to colorectal cancer These syndromes are probably the most heritable form of cancer today The HNPCC syndromes are similarly transmitted by a highly penetrant autosomal dominant gene

Family history evidence for a dominant inheritance pattern for colorectal carcinoma is loosely taken as at least three affected first degree relatives (*Table 3*) [6 7] The international collaborative group on HNPCC has agreed the minimum criteria which should be met before this diagnosis may be made At least three first degree relatives (one of whom should be diagnosed younger than 50 years old) should have had histologically verified CRC and one of these should be a first degree relative to the other two At least two generations should be affected and FAP should have been excluded [8]

Of particular interest to the Armed Services is the observation that HNPCC associated cancers are often of an earlier age of onset with relatively few adenomas Cancers affect the right side of the colon more often than in sporadic disease and are often of mucinous histology which may indicate a relatively poor prognosis There is no well defined genetic or phenotypic marker yet identified and therefore appropriate surveillance can only be arrived at if the family history is correctly identified

3 Fewer First Degree Relatives

The third category of familial risk is in those with fewer than three affected first degree relatives In this group the preponderance of colorectal cancer may be simply due to case clustering For these people however studies have shown that the risk of developing cancer is increased by at least between two and four times [7 9] possibly mediated by a partially penetrant dominantly inherited gene which increases susceptibility to the development of colonic adenoma [1] In these groups no marker other than family history has been identified which further underlines the importance of attention to family history taking both to alert relatives of affected individuals and to identify those with affected family members especially those younger than 45 years old Up to 7% of the population may be in this category [9] but age is also relevant the likelihood of developing colorectal neoplasia increases dramatically after 40 years old Excess lifetime risk is reduced by 77% by the time 65 years of age has been reached assuming that CRC or colonic adenomas have not already developed [9]

Using the extent of family history to determine relative risk

The role of a family history in predicting an increased individual lifetime risk for the development of CRC has useful applications for the early detection of disease [7 9] The extent to which the family is affected bears a direct relationship to the putative lifetime risk of each individual (*Table 4*) and thus to the recommended intervention in each case If evidence exists to suspect a dominant inheritance pedigree (but not FAP) individuals are currently recommended to undergo colonoscopic examination repeated three or five yearly

Table 4 Extent of family history and estimated lifetime risk

Number of affected relatives	*Attributed lifetime risk*
No affected relatives	1 50
1 first degree relative*	1 17
1 first and 1 second degree relatives†	1 12
1 first degree relative < 45 years at diagnosis	1 10
Both parents affected	1 8 5
2 first degree relatives‡	1 6
3 first degree relatives	1 2

Key
* Parent sibling etc
† Uncle grandparent etc
‡ Not both parents

The increased estimated lifetime risk is shown according to the number of affected relatives in the pedigree Three affected first degree relatives are sufficient to suspect a dominant inheritance pedigree [6 7]

depending on the presence or absence of polyps [8] Lower risk levels than this indicate a lesser susceptibility to the disease and should not indicate the need for colonoscope examination in all cases These individuals form a subgroup who should be alerted to their situation and in whom significant colorectal symptoms should be promptly investigated Because of their increased risk they form a subgroup in whom regular faecal occult blood testing should be of greater benefit

EARLY DETECTION OF CRC IN THE ROYAL NAVY

The Armed Services are unique in having a recurrent age and employment based requirement for ensuring satisfactory fitness standard — the PULHHEEMS examination — which offers an opportunity to request and regularly update information concerning a family history of bowel (and other) cancers The reference which dictates the intervals between such medical examinations also states that 'A health screening and counselling programme will be carried out at the same time (at PULHHEEMS) for serving personnel' The concept of preventative health care has already been accepted

Many junior service personnel are unlikely to have first degree relatives affected by CRC but as their age increases the number with affected relatives and the number of affected relatives will also increase This line of questioning will also enable the focus of attention to be brought to the symptoms commonly associated with colorectal disease e g a persistent change of bowel habit abdominal pain and rectal bleeding the latter at least should ideally be further evaluated by a digital rectal examination and proctosigmoidoscopy in all age groups [22]

Figure 1 shows the age profile of Royal Naval personnel for 1992 The total number of personnel at risk will decline over the next few years due to reductions in defence spending and predictions based on these figures therefore present a worst case Furthermore if average compliance with screening of only 50-60% is repeated (as experienced in most population based trials) predicted workloads from screening will be reduced further as a result [9 10]

It is important to divide individuals into groups suitable for assessment on the grounds of potential risk family history and age are the most important of these

WHICH SCREENING PROTOCOL?

The most common screening protocols are biphasic employing an annual or biennial faecal occult blood test (FOBT) with follow up colonoscopy for those with positive results A significant family history can be combined with age and occult blood testing into a proposition for screening although direct colonic examination is appropriate for those with risk factors other than these e g a long history of inflammatory bowel disease

The type of FOBT to use (and the number of stools to sample at each intervention) and whether flexible sigmoidoscopy or colonoscopy should be employed as the method of second line investigation have important implications both for the screening protocol and the numbers of individuals likely to need further investigation after screening

THE CHOICE OF FAECAL OCCULT BLOOD TEST

Faecal occult blood testing was recommended as long ago as 1967 for the early diagnosis of colorectal cancer [3] Three different sorts of FOBT exist — guaiac (standard and sensitive) immunochemical and a haem porphyrin assay — all of which have differing characteristics

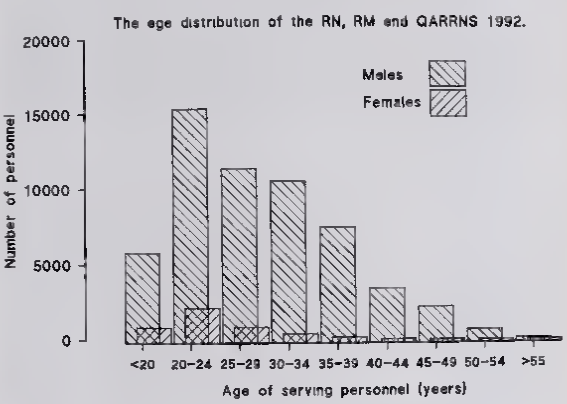

Figure 1

important to their potential use in screening programmes.[4]

The ideal FOBT for colorectal cancer screening is highly specific which implies a high sensitivity for colorectal bleeding combined with a low sensitivity for upper gastrointestinal bleeding. There is a limited need for dietary or medication changes during stool collection. It should be simple to apply and to read and for widespread application to a screening programme should be cheap.

Screening surveys have found that Haemoccult® (Rohm Pharma, Weiterstadt, Germany) a standard guaiac based test is neither sensitive nor specific enough to recommend its use in family history or population based screening.[3 9 10 5 6] At least 50% of cancers of the caecum and rectum may remain undetected by this test simply because of the limitations inherent to the chemical reaction involved. I.e. the requirement for the digestion of blood to have proceeded up to but not beyond the prodnction of haematin. Guaiac based tests aim to detect the pseudo peroxidase activity of haem and as such are readily confused by the activity of dietary derived and endogenously produced pseudoperoxidases.

Immunological FOBTs are haemagglutination tests specifically directed at elements of human haemoglobin and the need for dietary restriction during stool sampling is obviated. Haem porphyrin assays are very sensitive indicators of GI blood loss and they are generally used in a quantitative rather than qualitative manner.

One author's experience (NC) of a family history based screening programme in the Colorectal Research Unit at Basingstoke District Hospital has applied the immunological FOBT HemeSelect® (SmithKline Diagnostics Inc. San Jose, California USA) as a single slide test — in a younger than usual group — with good effect. The positive test rate has been 6·5% of over 370 tests developed (unpublished data). Very good performance data for this FOBT have been previously established. Detection rates of 95% for carcinoma (75 of 79) and 86% for adenomas larger than 1cm in size (25 of 29) have been achieved utilising three test slides in symptomatic disease and serve to emphasise the usefulness of the test.[7]

Hemeselect has been recently compared directly with HemeSelect[5] in a population screen of 4018 asymptomatic subjects between the ages of 50 and 75 years. HemeSelect® detected bleeding from nine cancers compared with only one of nine detected by Haemoccult. A positive test rate of 9.7% (three test slides) was reported in this study.

The adverse effect of repeated stool testing on compliance and the loss of sensitivity due to single as opposed to multiple stool testing must also be accounted for. A reduction in compliance from 88% for a single test to 63% for a two day test has been shown but increased positive test rates from 2.6% to 3.7% for the two day test.[3] Protocols which recommend single stool versus multiple stool testing must accept a reduced positive test rate and aim to compensate for it with greater compliance and more frequent testing.

In general, the simpler the screening protocol the greater the likelihood of adequate compliance and thus of achieving meaningful results. It is unlikely that many individuals will themselves request repeat testing, and the tests will need to be administered by a suitable authority, probably centred on the Service Medical Centres based on PUI HHEFMS examinations or on a change of draft or appointment.

The most appropriate FOBT for a Naval protocol seems to be the immunological one. The availability of service laboratory staff to develop the test and the fact that dietary and medication changes are not necessary to maintain specificity indicate a preference for the latter, quite apart from the better neoplasia detection data. The disadvantage of the immunological test is its cost which at £5.00 per test is approximately five times the cost of a standard guaiac test, but this may be made cheaper by contract purchase. Although the guaiac FOBT is less expensive, this will represent a false economy because of the increased number of false positives likely to result from its use in an early detection protocol.

FLEXIBLE SIGMOIDOSCOPY OR COLONOSCOPY FOR COLONIC ASSESSMENT?

The majority of colorectal cancers arise in the left colon: 50% within reach of the rigid sigmoidoscope. Furthermore, 80% of all cancers and 95% of all adenomas are detectable using the 60cm flexible sigmoidoscope (assuming subsequent total colonoscopy is completed when adenomas are discovered).[6] *Table 1* shows that 11 of 12 presenting carcinomas in service personnel originated in the sigmoid colon or rectum. Screening studies which have employed a family history of colorectal cancer to develop a high risk group [7] and those in which a randomly selected group have been screened [8] have noted that comparatively few neoplastic lesions arise in the transverse and right colonic segments and similarly less than 10% of patients examined have such lesions in the proximal colon in the absence of more distal ones.

These findings suggest that colonic examination in asymptomatic individuals might be satisfactorily completed by flexible sigmoidoscopy (FS) when accompanied by a sensitive FOBT, assuming that the identification of distal neoplasia leads to subsequent total colonoscopic examination. When an individual with a family history containing at least three first degree relatives is being assessed, a positive occult blood test is being evaluated, or colorectal symptoms have been discovered during clinical questioning, total colonoscopy is mandatory.

Because total colonoscopy is not routinely required, screen prompted colonic examination may be completed with a single disposable enema and, in the vast majority of cases, without sedative medication. Occasionally the caecum may be intubated without prior sedation or standard bowel preparation provided a colonoscope is used for the examination. Difficulty in obtaining adequate colonic visualisation during FS is usually caused by severe sigmoid diverticular disease which is rare in the service age group. If such pathology is found or more likely, if left colonic examination has not been achieved for any other reason, an individual should be admitted for total sedated colonoscopy after suitable bowel preparation.

Because sedation is not routinely required, a greater number of examinations may be completed in each session, the limiting factor becoming the rapidity of endoscope disinfection. Furthermore, the need for recovery from sedation prior to returning to full activity and the requirement for trained nursing supervision during this period are both eliminated or reduced.

A PROPOSAL FOR THE ROYAL NAVY

The percentages employed to calculate the number of colonic examinations likely to be needed (*Table 5*) have been derived from the Basingstoke Family Colorectal Cancer Screening Project (unpublished data) combined with

Table 5 Percentages employed in protocol for early detection

Age group	*Factor*	*Population %*	*Assumed*
25-40 years	Any family history	7% [7]	5%
	3 First degree relatives	0·7%* of 5% (above)	0·035%
	Family history and FOBT +ve	6% of 5% (above)	0·3%
>40 years	FOBT +ve	9·7% [8]	9·7%
	Family history	7% [9]	7%

Key
* 0·7% represents the proportion of individuals in the author's selected series of people with a family history of CRC at Basingstoke who had three affected first degree relatives

The derivation of the percentages employed to assess the anticipated workload from a protocol for the early detection of colorectal neoplasia

published estimations of the frequency of a family history containing at least one affected first degree relative. A downwards adjustment has been made to the estimated 7% frequency of a family history of CRC[10] to take into account the relative youth of the population at risk. The recently published comparison between Haemoccult® and HemeSelect® provide additional data.[8] The latter numbers are from a significantly older age group than that of service personnel and the number of positive tests is likely to be less than the 9·7% shown in the table. The numbers produced must be considered to be approximate but are realistic. The need for colonic investigation will be reduced by the effect of poor compliance which will have its effect prior to the application of the FOBT. Further reduction in the number of colonic examinations initially needed will result from the fact that intervention will initially take place at a five yearly medical examination although publicity of the important risk factors and publication of a screening information pamphlet such as the one produced for the Basingstoke Family Cancer Screening Programme may increase this number.[1]

At the initial maximum anticipated level of examinations demanded by CRC screening (*Table 6*) the number of colonoscopies (90) and flexible sigmoidoscopies (56) should be readily manageable in Naval secondary medical care facilities provided that extra clinical sessions are granted to the trained endoscopists.

THE COST OF THE PROTOCOL

To establish the annual cost of a programme the cost of each element of the protocol can be estimated (*Table 7*).[11] A protocol for service use would have the advantage that the endoscope equipment are already purchased and the staff already employed. The true additional cost is mostly due to the purchase price of the FOBT and the necessary secretarial and administrative assistance to keep control of a major screening project — an essential part of screening.[12]

A maximum of 9 600 FOBT kits will be required to apply this protocol during the first five years assuming two for each of the 5% of those younger than 40 years old with an affected relative and two for all of those older than this. The precise number of kits needed will depend on the frequency of testing but the assumption has been that one test and one repeat test in each five year period will be the likely average test rate. The rate of compliance with screening is assumed to be 60%. Total screening costs by this protocol might therefore be approximately £25 900 annually. In a stable population this amount would reduce as the programme progresses considering that the time for the adenoma-carcinoma sequence to become established implies that once sigmoidoscoped individuals may be considered clear for up to ten years.[13]

CONCLUSIONS

A programme to facilitate the early detection or prevention of CRC in the Royal Navy and its pensioners could be instituted at low cost with little penalty to our current endoscopic commitment. Such a programme aims to improve an individual's chance of long term survival if affected by the disease.

Table 6 FOBT and Family History based screening proposal

Age group	Number at risk	Method for screening	Effective factor to apply (see table 5)	Likely need for colonic examination	Reduction by non compliance of 40%	Number requiring for examination Flexi Sig	Number requiring for examination Colonoscopy	Number in first year (1/5) Flexi Sig	Number in first year (1/5) Colonoscopy
< 25	24 057	None	–	–	–	–	–	–	–
25 39	30 657	≥ 3 first degree relatives	0 035	11	4		7	–	2
		and							
		FOBT +ve with ≥ 1 or < 3 first degree relatives	0 3	93	37		56	–	11
> 40	6 635	FOBT +ve	9 7	643	257	–	386	–	77
		and							
		≥ 1 degree relatives	7	464	186	276	–	56	
					Total	276	449	56	90

A protocol for the early detection of colorectal cancer and adenoma would result in the requirement of an estimated 56 flexible sigmoidoscopic and 90 colonoscopic examinations in the first year.

Table 7 Annual cost of early detection protocol

	Unit Cost (£)	*Number*	*Total (£)*
Colonoscopy	150[1]	90	13 500
Flexible Sigmoidoscopy	50[1]	50	2 800
Faecal Occult Blood Testing	5	1 920	9 600
		Total	25 900

The cost of screening would amount to approximately £25 900 in the first year.

Screening for CRC in such a young age group at average risk is untried because of the low incidence of disease. The Royal Navy provides an opportunity to assess the economics of identifying individuals at higher than average risk in this group, considering that the prevention of just one case of CRC in a trained serviceman would result in a cost saving far in excess of the anticipated annual expenditure.

This assessment aims to gauge the workload that would be anticipated from an approach offering screening to a higher risk group i.e. due to a family history. Additional measures for early detection are offered to the over 40 age group who in other countries e.g. USA are already recommended to undergo annual FOB testing and rigid sigmoidoscopy.[9] Furthermore the United States Army already recommend such screening for their Servicemen (personal communication Major W C Sippo MD FACS US Army Medical Corps).

No effort is currently being made to improve on the detection of colorectal neoplasia than that which takes place by symptomatic presentation. By the application of guidelines concerning a family history of CRC and the introduction of FOB Testing in the over 40 age group an impact on the natural history of colorectal neoplasia in servicemen may be made. Although rates of diverse detection will be low in a group of this age, to deny servicemen access to modern concepts of susceptibility in colorectal cancer is at best short sighted.

Opinions from Royal Naval medical officers in response to this paper will be greatly welcomed.

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Cardiac diseases of young people. II: Hypertrophic cardiomyopathy

M L Cowley

INTRODUCTION

Hypertrophic cardiomyopathy (HCM) is the commonest cause of sudden death in young (< 35 years) athletes and is often discovered only at necropsy.[1] For those Armed Services which compel personnel to maintain a high level of physical fitness and undertake arduous exercise in the course of duty it is important that individuals at risk are identified and excluded from such activities. Current screening involves routine PULHHEEMS assessment (clinical examination) and special occupational examinations and electrocardiography. Although relatively insensitive and non specific more intensive screening cannot be justified as the clinical return is minimal and incidence of sudden death in young adults very low. Current screening arrangements generate a large number of referrals for specialist cardiological assessment usually because an ejection systolic murmur has been detected on auscultation of

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the precordium. Hypertrophic cardiomyopathy must be excluded and if detected requires further specialist management.

CLINICAL PRESENTATION

HCM is a genetic disorder with an autosomal dominant pattern of inheritance. Sporadic cases do occur. It is characterised by ventricular hypertrophy, myocardial fibre disarray[1,2] and impaired ventricular diastolic function.[3] The disease is patchy, mainly involving the left ventricle and commonly resulting in asymmetrical septal hypertrophy. Although intraventricular pressure gradients can be measured in the majority of cases there is no obstruction to left ventricular outflow.[4,5]

Screening of families of those affected reveal asymptomatic cases. This together with its detection for the first time in the elderly confirm that it is compatible with long term survival.[6,7] The presenting symptoms of dyspnoea, chest pain, palpitations and syncope[8] are common to other cardiac conditions but their occurrence in apparently otherwise fit young adults should raise suspicion of HCM. Dyspnoea is associated with raised left atrial and left ventricular end diastolic pressure (LVEDP). Atrial fibrillation, supraventricular tachycardia (SVT) and ventricular arrhythmia may all present with palpitations while chest pain in the absence of diseased coronary arteries may be related to microvascular ischaemia. Syncope is an indicator of poor prognosis and is thought to arise from a combination of arrhythmia and impaired ventricular filling leading to a critical reduction in cardiac output. Physical signs are subtle and sometimes absent. They include a jerky pulse, double cardiac impulse reflecting both atrial and ventricular contractions, and a mid or late systolic murmur generated by turbulence from intraventricular pressure gradients or mitral regurgitation.

INVESTIGATION

The electrocardiogram (ECG) is almost always abnormal[4] (*Figure 1*), usually revealing left ventricular hypertrophy (LVH), deep T wave inversion and commonly Q waves in the anterior chest leads. The chest x-ray is often non-contributory except for occasionally revealing pulmonary venous hypertension caused by the raised LVEDP. Echocardiography has been used to more clearly define the range of morphologic and functional abnormalities which may be found. M mode studies[4] (*Figure 2*) demonstrate disproportionate thickening of the intraventricular septum with reduced movement, left ventricular cavity obliteration and a reduced diastolic closure slope of the mitral valve. Systolic anterior motion of the mitral valve and mid systolic closure of the aortic valve may also be seen. Two dimensional studies have given more detailed information and have shown that the hypertrophy is symmetrical in 31% asymmetrical in 55% and apical in 14% of cases.[9] The diagnosis may be difficult in young

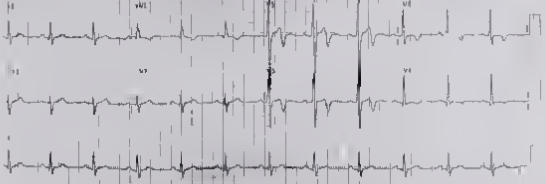

Figure 1 Electrocardiogram showing septal hypertrophy and repolarisation changes in I aVL V1 V6

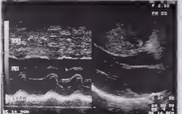

Figure 2. M-mode [illegible] LV cavity [illegible] systole [illegible] IVS [illegible] LV Left ventricular cavity. LVPW Left ventricular posterior wall.

athlete persons with a high cardiac output jerky pulse, physiological murmur and a high ejection fraction whose ECG shows high voltages and echocardiogram suggests LVH. Deconditioning and repeat studies may be necessary to differentiate the athletic heart from HCM.[7] Alternatively invasive investigation with angiocardiography[14] and myocardial biopsy may be undertaken. Features of LVH with angulation of the cavity which appears bent in its mid portion, entrapment of contrast in the columnae carnae and obliteration of the left ventricular cavity in systole are characteristic and seen in 90% of cases (*Figure 3*). In the remainder, simultaneous right and left ventricular angiography may be needed to demonstrate septal hypertrophy. In the proper clinical setting, histological examination of myocardial biopsies reveals myocardial fibre disarray, an important morphological marker of HCM which is present in 95% of cases.[4]

PATHOGENESIS AND GENETICS

Whether fibre disarray is a primary or secondary phenomenon is open to debate but experimental embryological and clinical evidence would strongly support a primary role in the pathogenesis of the condition. The hypothesis is that a basic genetically determined biochemical abnormality of sarcomere components is the substrate for an abnormal response to circulating catecholamines and nerve growth factors in utero.[9] This leads to over contraction of the sarcomeres which in turn results in overlap of actin filaments and hence disarray.[10] The consequence is isometric non-synergistic contraction followed by hypertrophy and a failure of regression of the normal developmental disproportionate septal thickness. The inter-ventricular septum assumes a catenoid shape and results in further isometric contraction. The septum becomes virtually inert and the left

Figure 1 Apical four chamber view showing LVH and cavity obliteration in dilated phase

ventricular free wall compensates by exaggerated contraction and subsequent cavity obliteration [10]

An autosomal dominant inheritance pattern is apparent in about 50% of cases and was originally recognised in 1960 from a family study of one of the cases originally described by Teare. Recently the genetic basis has been more clearly defined. Linkage to chromosome 14 and subsequent identification of a mutation within the coding sequence for the beta cardiac myosin heavy chain gene [11] has been followed by linkage to chromosomes 1, 11 and 15 with corresponding abnormalities of cardiac troponin T [12] and alpha tropomyosin [13]. Genetic heterogeneity may help to explain the differing prognosis seen between patients [9] lead to better risk evaluation and genetic counselling of family members of a proband [7].

PROGNOSIS AND RISK STRATIFICATION

In adults with known HCM, the annual mortality rate is 2–3%. Symptoms and functional status may deteriorate over many years with the development of end stage biventricular cardiac failure. Treatment with beta blockers or calcium antagonists may alleviate symptoms and in some cases surgical intervention by myectomy or transplantation is appropriate. More recently dual chamber cardiac pacing has been employed to relieve obstructive symptoms [14]. However sudden death is the major concern and its prevention poses the most difficult management problem. Despite the discovery of genetic markers and the hope that they will form part of future risk evaluation processes, current reliance must be placed on clinical and routine

investigative [illegible] Analysis of data from a retrospective [illegible] 354 patients with HCM followed up for [illegible] 23 years (mean 6) has indicated that of 2[illegible] clinical haemodynamic and electrocardiographic variables there were four which best predicted sudden death young age at diagnosis (<14 years) a history of syncope a family history of HCM and sudden death and severe dyspnoea (New York Heart Association functional class III or IV) at last follow up [9] However even using these four criteria there is a 30% false negative and 27% false positive rate Arrhythmias are common in HCM and much attention has been focused on these in relation to sudden death Supraventricular tachycardia is common but not associated with increased risk [10] Atrial fibrillation is related to poor prognosis but not sudden death[7] and is present in 7% of patients at diagnosis and develops in a further 7% within five years [11] McKenna *et al* have shown that during 72 hours of ambulatory ECG monitoring 29% of patients will have at least one episode of ventricular tachycardia (VT) This is usually asymptomatic non sustained and multiform at rates averaging 140 beats per minute As a marker of risk of sudden death VT has a 70% sensitivity and 80% specificity and a negative predictive accuracy of 97% [1] Although VT is associated with a seven times increased risk of sudden death[9 12] its positive predictive accuracy is only 23% [13] a fact which must be borne in mind when considering any form of prophylactic therapy Invasive electrophysiologic studies in HCM patients have demonstrated impaired sinus node function abnormal atrioventricular node conduction prolonged His Purkinje conduction induction of atrial arrhythmias and precipitation of ventricular tachyarrhythmias of which the majority are either polymorphic VT or ventricular fibrillation (VF) It has been suggested that the induction of polymorphic VT or VF may be a critical marker for sudden cardiac death in HCM[14] but such a conclusion is premature until confirmed in larger studies [15]

CAUSE AND PREVENTION OF SUDDEN DEATH

Markers of disease activity or prognosis should not be interpreted as mechanistic Although arrhythmia and principally ventricular fibrillation is the terminal event [6] the antecedent events as yet remain unknown It is unlikely that outflow obstruction is involved Gradients are recordable at rest or on provocation in only 35% of cases[1 8] and equal numbers with and without gradients die [9] Moreover surgery which abolishes gradients does not prevent sudden death [17] Cellular disarray and myocardial fibrosis not septal thickness are the probable substrate for VT In vitro[18 19 20 21] and animal studies[22] have demonstrated electrical instability and an increased incidence of sudden death associated with cardiac hypertrophy Additionally higher degrees of impairment of left ventricular relaxation filling and compliance as a result of myofibrillar disarray have been associated with both sudden death and indicators of a poor prognosis[23 24] It is reasonable to suggest that increased heart rate VT and impaired filling is a combination likely to lead to haemodynamic deterioration from a reduction in stroke output cardiovascular collapse and sudden death There are no studies to show that VT in the presence of normal filling has a more favourable prognosis

Preventing sudden death remains the challenge There are no satisfactory studies which indicate a prognostic benefit from treatment with propanolol calcium channel blockers or surgery However in a study of matched non parallel treatment groups amiodarone given to suppress VT was associated with improved survival when compared with other anti arrhythmic agents [25 26] As previously stated dual chamber pacing which may enable more favourable haemodynamics is proving useful in some subgroups of patients [27]

SUMMARY

HCM is an uncommon but serious disease with important implications in the services It requires extensive evaluation and careful consideration of measures to reduce the risk of sudden death or deterioration to end stage heart failure This can be achieved only by cardiologists with access to non-invasive and invasive testing facilities and with reference to colleagues with wide experience of the condition It has been suggested that in those identified to be at high risk of sudden death appropriate therapeutic measures including drug and pacing therapy may allow a return to strenuous activity [28] These findings are preliminary involving small numbers of patients and are unlikely to be acceptable in a service environment HCM should be a bar to

units and the services but if the diagnosis is made during active service it may be compatible with limited continued service following full evaluation including an assessment of risk of sudden death

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ABSTRACT

Murrison A W, Glasspool E, Pethybridge R J, Francis T J R, Sedgwick E M Neurophysiological assessment of divers with medical histories of neurological decompression illness *Occup Environ Med* 1994 **51** 730-734

Objective — To examine the possibility that subclinical damage may persist after clinical recovery from neurological decompression illness

Methods — The neuraxes of 71 divers with medical histories of neurological decompression illness and 37 non diver controls were examined by recording the somatosensory evoked potentials produced on stimulation of the posterior tibial and median nerves

Results — Although the tests gave some objective support for the presence of soft residual neurological symptoms and signs, no evidence was given for the presence of subclinical damage

Conclusions — The contention that neurological damage persists after full clinical recovery from the neurological decompression illness was not supported

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Case histories

Tuberculous epididymitis presenting as acute hydrocele

R J Guy

Summary

A case of tuberculous epididymitis which presented as an acute hydrocele is reported and the roles in literature reviewed. The patient had undergone contralateral orchidectomy 20 years previously for the same condition associated with pulmonary tuberculosis. The most recent episode followed unrelated illness, the diagnosis was confirmed after surgical intervention and cure was achieved with adjuvant chemotherapy. Although rare, genital tuberculosis should still be considered in cases of scrotal swelling when there is a history of previous tuberculous disease or exposure.

INTRODUCTION

Epididymitis is an uncommon manifestation of tuberculosis in the indigenous population of the United Kingdom and the incidence of pulmonary and genital tuberculosis in Europe has declined in recent decades. There has been a small increase recently in the USA [2] proportionately greater for extra pulmonary sites. Much of this increase has been seen in association with Human Immunodeficiency Virus infection. Sexually active males between 20 and 40 years of age are predominantly affected[3] and over 70% of patients give a history of exposure to tuberculosis.

A case of tuberculous epididymitis is described and the clinical and pathological features discussed.

CASE REPORT

A 71 year old Caucasian male presented with a five day history of painless left hemiscrotal swelling. There were no significant urinary, respiratory or constitutional symptoms. Six months prior to admission he had undergone coronary artery bypass surgery. During the post operative convalescent period he had suffered symptoms of a prolonged 'flu like' illness from which he eventually made a complete recovery. Twenty years previously he had undergone right orchidectomy followed by anti tuberculous chemotherapy when tuberculous epididymo orchitis associated with pulmonary tuberculosis was diagnosed.

On examination he was afebrile and generally well, other than a median sternotomy scar, physical examination of his chest and abdomen was unremarkable. Scrotal examination revealed a large left sided hydrocele with non tender swelling of the cauda epididymis but a clinically normal testis. The prostate was smooth on digital palpation. Chest radiography showed right apical calcification consistent with old tuberculosis but there was no evidence of any active lung lesion. A scrotal ultrasound examination confirmed a large hydrocele and demonstrated an area of mixed echogenicity plus calcification in the cauda epididymis.

During scrotal exploration under general anaesthesia the hydrocele was drained of straw coloured fluid and treated by eversion of the tunica vaginalis (Jaboulay's procedure). The body of the testis was found to be normal but incision into an inflamed and oedematous cauda epididymis released free pus; this was evacuated and partial epididymectomy performed. The scrotum was closed and the patient made an uneventful post operative recovery. He subsequently received intravenous cefuroxime and metronidazole.

Histological examination of the epididymis showed dense granulomatous inflammation with caseation and the presence of epithelioid cells and Langhans' giant cells. Acid fast bacilli were

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dent stained on Ziehl Neelsen staining and culture of the hydrocele fluid grew *Mycobacterium tuberculosis*. Urine microscopy revealed a moderate pyuria but subsequent culture of early morning urine samples was negative for acid fast bacilli. Intravenous urography showed a large simple cyst in the right kidney which was confirmed on Computerised Tomographic (CT) examination but there was no evidence of active or old tuberculosis.

The patient's medication was changed to a combination of rifampicin, isoniazid and pyrazinamide. After two months of this treatment the pyrazinamide was excluded and he completed a further six months on the other two drugs. He remains well on follow up.

DISCUSSION

Tuberculosis (TB) remains an important public health problem worldwide although there has been a decline in the incidence of pulmonary and extra pulmonary TB in recent years in the UK.[1] Most cases of genital TB are associated with urinary tract TB but epididymitis remains an unusual manifestation in patients with known TB approximately 7% will experience epididymal involvement.[2] In 1986 in the USA the incidence of TB increased by 2.6% and extra pulmonary cases increased relative to pulmonary disease.[3] There was a concomitant increase in cases of genital TB seen in association with Human Immunodeficiency Virus infection.

Genital TB occurs most commonly between the ages of 20 and 40 years during the time of greatest sexual activity although before anti-tuberculous chemotherapy patients tended to be younger.[5] At least 70% of patients give a history of previous TB. In approximately 28% of patients with genitourinary TB involvement is solely genital.[7] The prostate epididymis and seminal vesicles are the most commonly affected sites usually more than one concurrently.[7] Orchitis is considered rare,[8] probably occurring by contiguous spread from the epididymis and therefore reflecting a later stage of the disease. Although bilateral testicular involvement was common in the past the disease as seen today is primarily unilateral.[9] Controversy exists over the likely routes of spread within the genitourinary system. Involvement of the epididymis has been variously attributed to haematogenous spread, descent via the urinary tract - retrocanalicular or retrourethral spread[1] or via pelvic lymphatics.

Tuberculous epididymitis has also followed administration of intravesical Bacille Calmette Guerin (BCG) in the management of bladder transitional cell neoplasms.[12] The communicability of genitourinary TB is probably lower than that of pulmonary disease,[6] the inhalation of respiratory fomites or aerosolized urine constituting the primary mode of infection and the possibility of venereal transmission has also been raised.[4] In the case reported here there was no evidence of active TB elsewhere within the genitourinary system. Epididymal involvement may have occurred via the haematogenous route as a result of reactivation of a tuberculous focus in the lung, secondary to immunosuppression induced by major surgery and subsequent illness. However the presence of epididymal calcification and the previous genital history suggests that reactivation of local disease may have been responsible.

Clinically tuberculous epididymitis may present with a painful or painless scrotal swelling usually of insidious onset. Acute onset of symptoms as in this case is unusual.[7,10] Other symptoms include discharge and scrotal sinuses,[7] although the latter indicates advanced disease. When only the external genitalia are involved irritative voiding symptoms are usually absent as are fever and other constitutional symptoms. Clinical differentiation from tumour may be impossible.[8] The significance of pyuria is controversial - it was absent from only 12% of urine specimens in one series from which tubercle bacilli were eventually grown[2] and its importance has been noted by others.[7] However when only the external genitalia are involved pyuria and urinary acid fast bacilli are frequently absent.[7]

Intravenous urography may be normal in up to 25% of patients with tuberculous epididymo-orchitis[10] and it has been considered an insensitive way of detecting renal involvement.[7] However pulmonary and renal TB have been documented in 50%[7] and 80-85%[4] respectively of patients with genital TB and perhaps a more aggressive approach should be adopted in searching for a primary tuberculous focus.

Ultrasound appearances of tuberculous epididymitis are generally non specific[10] although it remains a useful tool in distinguishing intra from extra testicular lesions.

Differentiation from tumour however may still be impossible.[3] Certain sonographic features are claimed to be supportive evidence of tuberculous infection and these include

prominent involvement of the cauda epididymis with marked heterogeneity[1] and calcification as demonstrated in this patient. Fine needle aspiration of suspicious areas under ultrasound guidance has been used in the diagnosis of tuberculous involvement with reported success[15].

The definitive diagnosis of tuberculous epididymitis is usually only made following surgical intervention. Early exploration has been recommended in suspected cases[2] especially if the initial examination of early morning urine samples does not identify acid fast bacilli. Epididymal biopsy and enzyme will usually be diagnostic but orchidectomy may be necessary to deal with a large abscess or if differentiation from tumour macroscopically proves impossible.

Modern anti-tuberculous chemotherapy is highly effective in treating genital disease. Treatment regimens may vary[7,9] although an initial phase using at least three drugs followed by a continuation phase using two drugs remains standard practice in the UK[1] and was clearly appropriate for eradicating the disease in our patient. Outcome following treatment is almost invariably favourable but fatal complications have been reported[2].

In conclusion although tuberculous epididymitis remains a rare entity it should be considered in cases of scrotal swelling particularly if there is a history of previous tuberculous disease or exposure and in cases of epididymitis not responding to conventional antibiotics. An increasing incidence may be anticipated in association with HIV infection. Ultrasound examination may be useful in characterising the lesion but a definitive diagnosis is usually only possible following surgical exploration for which there should be a low threshold in suspected cases. Subsequent anti-tuberculous chemotherapy is effective in achieving a cure.

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Penile problems — hidden lesions of the sailor

C J Hand and A J Walker

INTRODUCTION

Penile problems are a common occurrence in the young sexually active male population of this country As this group makes up the majority of the members of the armed forces it is not surprising that these conditions are seen frequently in the sick bay Such problems are usually easy to diagnose and treat however the medical officer must always be wary of the less usual This paper reports two apparently simple cases that were later found to be of greater clinical significance than initially thought and reviews the management of less usual penile problems

CASE 1

A 46 year old uncircumcised male submariner otherwise fit and well with no past medical history of significance was referred by his sick bay with symptoms of chronic balanitis (inflammation and poor hygiene problems on the mucosal surface of his foreskin) of many months duration He had been treated for some time with a variety of creams and applications with no success

On examination the physical findings were localised to the glans of the penis There was a very moist mucosa on the inner surface of the prepuce with a raised red plaque in the coronal sulcus

The lesion was biopsied Histological examination showed it to be Erythroplasia of Queyrat He was subsequently admitted to hospital and underwent circumcision removing the lesion with a wide normal tissue cuff Regular close follow up by his GP has been arranged as he has subsequently left the Royal Navy

CASE 2

A 33 year old uncircumcised male was found at a belated PULHHEEMS to have extensive penile warts He had avoided PULHHEEMS since the age of 25 years despite being promoted during this period The warts had been present for 12 years increasing slowly in size until he had become frightened of the possible diagnosis and consequently not sought medical advice There was no history of urethral discharge He was married and surprisingly still having regular sexual intercourse

Examination revealed a large irregular papillary growth involving the prepuce glans and shaft of the penis extending clockwise from the 6 to the 2 o clock position The urethral meatus was not involved The whole surface was wet with a peculiar smell There was no inguinal lymphadenopathy

Initial assessment at a genito urinary clinic produced the clinical diagnosis of Buschke Lowenstein tumour which was not amenable to local treatment He was consequently forwarded for surgical opinion and more definitive management This took the form of circumcision electrocautery and fulguration of the affected area under general anaesthetic The initial results were satisfactory

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However at review two months later local recurrence on the area of the glans was found He subsequently underwent formal excision of this area two weeks later

DISCUSSION

The differential diagnosis of potentially malignant penile lesions include

Table 1 Premalignant penile lesions and early penile carcinomas

Premalignant	Balanitis xerotica obliterans
	Condyloma acuminatum (Buschke Lowenstein tumour)
	Leucoplakia
	Premalignant fibroepithelioma of Pinkus
	Pseudoepitheliomatous keratosis and micaceous balanitis
Carcinoma in situ	Bowen's disease
	Bowenoid papulosis
	Erythroplasia of Queyrat

Differentiation is by macro and microscopic appearance which may challenge even the most experienced of physicians

Condylomata acuminata

Condylomata acuminata are described as strictly superficial benign vascular papillary growths confined to the ano genital area and caused by certain types of papilloma virus Rare reports have demonstrated carcinomatous change from such benign lesions

Giant condylomata acuminata (Buschke Lowenstein tumour)

Buschke Lowenstein tumour (first described by Buschke in 1896[1] and later Buschke and Lowenstein in 1925[2]) is similar to the condyloma but spreads into the deeper tissues This extension compresses the surrounding tissues giving a smooth advancing edge with no breach of the basement membrane[3] Some authors consider this to be a spectrum of disease with the Buschke Lowenstein tumour being a verrucous carcinoma but less infiltrative[4] Metastasis to regional lymphatics has not been demonstrated[3 5 6] Any lymph node involvement is inflammatory These lesions are reported to have an offensive odour this is most frequent when necrosis is present[6] Treatment may be conservative and podophyllin has been successfully used[6] However its application may confuse the histological appearance and produce cellular changes similar to squamous cell carcinoma[6] Electro excision and fulguration have also been reported as curative but local recurrence is not uncommon[3] Most authorities advocate operative excision a limited procedure with a 2 cm margin of normal tissue is all that is necessary for cure Radical perineal urethrostomy may be necessary if the tumour is extensive[5] Other forms of treatment such as YAG laser ablation and cryosurgery alone or in conjunction with tropical 5 fluorouracil are beginning to produce successful results

Erythroplasia of Queyrat

Originally described by Tarnovsky in 1891 it was not appreciated as a distinct entity until Queyrat's work in 1911 Its recognition as a carcinoma in situ was in 1933 with the work of Sulzberger and Satenstein

Erythroplasia of Qneyrat is a disease of males usually seen in the non circumcised especially between the ages of 20 to 80 years (most commonly between 50 and 70 years) Its aetiology is not known but is felt to be due to chronic irritation from retained smegma although syphilis has been implicated

Macroscopically it is a rounded sharply outlined asymptomatic papule or plaque on the glans penis mucosal aspect of the foreskin coronal sulcus or perurethral area It may be a single or multiple lesion The lesion is classically described as red shiny and velvety although it may also be dry and scaly or less often eroded or ulcerated

Diagnosis can only be confirmed by histology to rule out all other possible differentials The histopathology is very similar to that of Bowen's disease however Erythroplasia of Queyrat is not associated with such a high incidence of internal malignancy but has a greater tendency to local invasion (squamous cell carcinoma developing) Biopsy specimens of condyloma treated with podophyllin may bear a striking histologic similarity to Erythroplasia of Queyrat (especially one to three weeks post treatment) Once the diagnosis is confirmed circumcision is indicated in all cases Other treatment includes electrocautery deep fulguration local resection cryotherapy[5] irradiation and partial/complete

penectomy Enlgnration and radiotherapy are said to have failnre rates of 83% [11] Penectomy and surgical excision are mutilating procedures being reqnired in only persistent cases and should be avoided if at all possible Circumcision is the treatment of choice when the disease is limited to the prepuce otherwise 5 fluorouracil has been advocated by many authors on biopsy confirmed lesions on the rest of the penis [5] (its method of action is unclear but is thought to block deoxyribonucleic acid synthesis in the cell by inhibiting thymidilate synthetase) A 5% cream preparation of 5 flourouracil is applied twice daily for four to five weeks The main side effect of this treatment is dermatitis of the groin and scrotal region from inevitable displacement of the cream from the affected area consequently it has been recommended that the wearing of a condom after application reduces these effects and shortens the treatment period [5] Close follow up post treatment is mandatory for several years

Twenty percent of cases of Erythroplasia of Queyrat will develop into invasive cancer 10% will have evidence of squamous cell carcinoma Consequently malignancy should be thoroughly looked for and surgical excision performed in cases recalcitrant to 5 fluorouracil

Medical Officers should be reminded that penile lesions may not be as simple as they initially appear Early referral for specialist opinion should be considered in all patients not responding to simple treatment or where the diagnosis is in question

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ABSTRACT

Rogers I Brown D C The microwave auditory phenomenon — A case study Proceedings of the IRPA Regional Conference on Radiological Protection Portsmouth 1994 Pages 201 204

The occupant of a property adjacent to a Ministry of Defence (MOD) establishment has for the past two years suffered from an auditory annoyance which it is believed is caused by the Watchman radar installed at the Royal Naval Air Station (RNAS) Culdrose In an effort to determine the cause of the condition a radio frequency (RF) survey was conducted by the Defence Radiological Protection Service (DRPS) and the Royal Air Force Signal Engineering Establishment (RAFSEE) The level of pulsed microwave radiation in and around the property was measured and on the basis of the levels observed and the medical evidence available on the effects of microwaves it is concluded that the signs and symptoms experienced are not related to the Watchman radar system

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Audit

Orthopaedic implant removal at Royal Naval Hospital Stonehouse: A three-year review

G E D Howell, C J Hand and R Dodenhoff

Abstract

A recent study[1] stated that 11% of all elective orthopaedic procedures performed at a Regional Orthopaedic Unit involved removal of orthopaedic implants. Indications for certain orthopaedic implant removal remain unclear.

As budgets are squeezed even tighter throughout all branches of the Royal Navy we looked at each operation performed for orthopaedic implant removal at Royal Naval Hospital Stonehouse, and questioned their effectiveness with respect to finance and working days lost for serving personnel.

INTRODUCTION

Over the past four decades a greater understanding of biomechanics and immunology has produced a rapid development of design and materials of orthopaedic implants. There has been a concomitant increased frequency of internal fixation used in the management of fractures.

Whilst indications (whether absolute or relative) for implant removal (*Table I*) remain unchanged, reports of stress risers producing pathological stress fractures about implants and associated malignancy [2] have reduced the threshold of orthopaedic surgeons to remove implants from patients without absolute indication.

These reports must be countered by the risk of general anaesthesia and surgical complications which in certain procedures may be as high as 40%.[3] The incidence of refracture has been reported as high as 10%.[4]

With greater financial accountability cost per procedure as well as lost working days due to hospitalisation, sick leave (Hospital or Establishment) and medical downgrading should also be added to the latter list of considerations before agreeing to remove orthopaedic implants from service personnel.

Table 1

Absolute Indications for Removal of Metalwork

1) Percutaneous wires pins (including external fixators)
2) Syndesmosis screws
3) Intramedullary nails
4) Dynamisation of intramedullary nails
5) Across physis
6) Allergy to metal implant
7) Loosening of implants

Relative Indications for Removal of Orthopaedic Implants

1) Infection
2) Close to physis
3) Biomechanical
   (i) Stress riser
   (ii) Corrosion — Stainless steel
   — Metal incompatibility
4) Because it is there
5) Loosening of implants
6) Discomfort at site of metalwork

METHODS

All service personnel who underwent orthopaedic implant removal at Royal Naval

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Hospital Stonehouse between 1 January 1991 and 28 February 1994 were identified. All patients with absolute indications for removal of metalwork were discarded and the medical documents of those with a relative indication for implant removal were examined. The following details were specifically identified:

1) Reasons for metalwork removal as recorded on the pre operative (out-patient) FMed7 or pre operative clerking sheet as completed by junior medical staff.
2) Number of working days lost due to hospital stay and sick leave (Hospital or Establishment).
3) Length of medical downgrading.
4) Complications.

RESULTS

During the period studied 95 service personnel underwent removal of orthopaedic implants of which 74 had relative indications. The operations were performed by all grades of surgeons (primarily junior pre fellowship). Figures are broken down in *Table 2*.

Thirty four patients had symptoms recorded pre-operatively: these included pain, pain in cold weather, prominence of metalwork, infection and mal-alignment of metalwork.

In this group each patient had an average of 13.1 days off work and a further 16.8 days of medical downgrading. This excludes time lost for out patient visits.

There were no recorded complications of surgery.

Forty patients were symptom free prior to operation. Reasons recorded for metalwork removal included desire by the patient for its removal, the patient had been informed that the metalwork needed to come out or that there was an operational need with respect to forthcoming deployment (to Northern Ireland and Norway).

Each patient had an average of 12.8 days off work with a further 20.3 days of medical downgrading.

Of note four complications occurred in this group [one haematoma required surgical drainage and three wound infections occurred, none of which required further surgery].

All complications occurred to patients who had implants removed from a lower limb with a junior surgeon performing the operation.

Table 2 Breakdown of operations

	Patients with symptoms	*Patients without symptoms*
ROM from clavicle/arm		
Total	3	3
Days off work	23 (7.7)	23 (7.7)
Days down graded	0	10
ROM from forearm		
Total	6	7
Days off work	45 (7.5)	87 (12.4)
Days down graded	132 (22)	120 (17.1)
ROM from leg		
Total	3	3
Days off work	37 (12.3)	47 (16.7)
Days downgraded	10 (3.3)	162 (54)
ROM from lower leg		
Total	22	27
Days off work	330 (15)	360 (13.3)
Days downgraded	430 (19.5)	395 (14.6)

Figures in brackets are averages
ROM removal of metalwork

DISCUSSION

When absolute indications are excluded there are few rules for implant removal however the following guidelines must be adhered to

Pre Operatively

(1) The union of the fracture beneath the implant must be confirmed with a recent radiograph
(2) The patient must be aware of possible complications if the implant is left in situ or removed
(3) The correct equipment must be available in the operating theatre for implant extraction

Per Operatively

(1) Soft tissue dissection (including granulation tissue) requires skill and patience to avoid damage to vessels and nerves
(2) Great care must be exercised to avoid stressing implants and subsequent fracture of the underlying bone or implant.

Post Operatively

(1) Patients must have a radiograph taken to prove all intended implants have been removed and no bone refracture has occurred
(2) The bone from which the implant has been removed may need to be protected because of the stress risers across osseous defects A single screw hole may weaken the bone by as much as 30% [7] The patient must be warned of the possibility of refracture

All too frequently the procedure is delegated to relatively inexperienced junior surgeons at the end of an operating list

Implant removal is not complication free (as demonstrated by our report) and therefore the procedure should not be treated lightly The literature is littered with reports of wound infection nerve injuries compartment syndrome refractures etc [5 6] and patients resort to litigation all too frequently

Implant removal is expensive and consumes valuable operating time This is compounded by the time the patient spends away from place of duty as well as a period of medical downgrading

CONCLUSION

Orthopaedic implant removal constitutes 7% of elective orthopaedic operations performed at Royal Naval Hospital Stonehouse During the period studied 40 patients (54%) undergoing implant removal without absolute indications had no pre operative symptoms Of these four subsequently had surgical complications requiring extended time off work and prolonged medical downgrading

It is our advice that the current practise of implant removal from asymptomatic patients should be abandoned if no absolute indication exists When an absolute indication exists orthopaedic implant removal should be performed by adequately trained surgical staff

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The early morbidity of varicose vein surgery

D C Mackay, D J Summerton and A J Walker

Abstract

The early outcome and morbidity associated with varicose vein surgery were assessed at six months post operation by postal questionnaire. Most cases underwent saphenofemoral ligation above knee stripping of the long saphenous vein and multiple stab avulsions. A 73.8% response rate resulted in 155 replies and revealed a high incidence (65.8%) of perceived complications within the first two weeks after surgery. The commonest of these were bruising, pain and numbness. Over a third of patients consulted their general practitioner (GP) postoperatively. Half of these required further management or treatment and the rest reassurance alone. At six months 79.4% were satisfied with the outcome of their surgery although some still claimed problems with residual veins, skin discolouration, numbness and ankle or foot discoloration. Eleven percent were referred to hospital for further opinion, mostly because of perceived residual varicose veins. The difference between residual and recurrent varicose veins is discussed. No patient felt that the standard 2.5 day admission was too long and 12.9% thought it too short. Day case surgery is not a popular option in this population group.

Despite high satisfaction rates there is a considerable morbidity attached to varicose vein surgery. We believe that good pre- and perioperative communication augmented by a comprehensive information sheet is important to prepare patients for those postoperative problems and thus reduces their perceived importance.

INTRODUCTION

Interest in the management of varicose veins has increased in recent years. Several leading articles [1–3] have reviewed current philosophy on the optimal investigation and treatment of the condition. Sclerotherapy or stab avulsions alone is considered suitable for the treatment of only localised varicose vein disease [4,5]. It is recommended that the more extensive procedure of saphenofemoral flush ligation combined with above knee stripping of the long saphenous vein (LSV) and multiple stab avulsions or later sclerotherapy is undertaken when demonstrable saphenofemoral incompetence is present [1,4,5].

There has been considerable concern about the high incidence of recurrent varicose veins [6]. In one series 20% of the total number of varicose vein operations performed were for recurrent veins [7]. The rate of recurrence is far higher if saphenofemoral ligation is not accompanied by above knee LSV stripping [8].

Several studies based on postal questionnaires [9,10], clinical assessment [11,12] or laboratory investigation [8,13] have looked at the results of this surgical procedure. These have tended to concentrate on defining the long term recurrence rate of dilated veins or presenting symptoms. No study has reported on the level of early morbidity associated with what is a relatively extensive yet commonly performed surgical procedure.

The present study was designed to address this situation by quantifying the morbidity arising from and assessing patient satisfaction with the surgical treatment of varicose veins in a single surgical firm at one hospital.

PATIENTS AND METHODS

All patients undergoing varicose vein surgery under the care of the senior author at The Royal Naval Hospital Plymouth between 1 June 1992 and 1 December 1993 were contacted six months after discharge and invited to complete a questionnaire based assessment of their treatment (*Figure 1*). This included questioning on

1. The effectiveness of the consultation process during both the outpatient and inpatient periods
2. The timing of discharge from hospital
3. Compliance with advised post-discharge treatment
4. Morbidity and complications arising during the first two postoperative weeks
5. Persistent and recurrent symptoms after six months
6. Consultation rate and the treatment given by GP

At the time of writing the authors were all appointed to RNH Plymouth. Surgeon Lieutenant Commander Mackay is currently appointed to RNH Haslar as is Surgeon Lieutenant Commander Summerton. Surgeon Commander Walker is at RNDHU Derriford Plymouth.

Dear Sir/Madam

We are currently undertaking a survey of patients undergoing varicose vein surgery at the Royal Naval Hospital in order to assess the long term effectiveness of treatment and to ascertain whether any improvements can be made in the service. As it is about six months since your operation could you please complete the following questionnaire and return it to us.

1. Was your proposed treatment/operation adequately explained to you in the clinic?
   Yes/No Comment
2. Did you understand the explanation of your operation given on admission?
   Yes/No Comment
3. Did you receive the information sheet on admission?
   Yes/No Comment
4. Did you understand the information it contained?
   Yes/No Comment
5. Were any remaining queries answered prior to your discharge?
   Yes/No Comment
6. Did you feel that your hospital stay was
   Too long/Too short/About right?
7. Did you wear your TED stockings for two weeks as advised?
   Yes/No Comment
8. Did you follow the other advice given?
   Yes/No Comment
9. Were there any unexplained or unexpected problems with your legs during the first two weeks after operation?
   Pain/Bleeding/Numbness/Excessive bleeding
   Specify others
10. Are you happy with the results of surgery at six months?
    Yes/No
    Recurrent dilated veins/Continued leg pain/Skin discoloration/Ulcers/Bleeding
    Specify others
11. Did you consult your GP with these problems?
    Yes/No Comment
12. Was any treatment by GP necessary?
    Yes/No Comment
13. Have you been referred back to the surgical clinic?
    Yes/No
14. Any further comments?

Figure 1 Varicose Vein Questionnaire

7. Overall satisfaction with the outcome after six months.

Details of preoperative assessment and operative procedures were obtained retrospectively from the case notes.

The majority (89.7%) of patients included in the present study underwent unilateral or bilateral sapheno femoral flush ligation above knee stripping (or attempted stripping) of the LSV and multiple stab avulsions. The remainder underwent either short saphenous flush ligation and multiple stab avulsions (4.5%) or multiple stab avulsions only (5.8%) — often as a second procedure after saphean-femoral ligation.

RESULTS

During the period of the study 210 patients underwent varicose vein surgery. Of these 155 (73.8%) completed the questionnaire fully. The age/sex distribution of this group is shown in *Table 1*. The waiting time from GP referral to outpatient appointment was between 18 and 1391 days with a mean of 96 days. Admission for surgery then occurred within two to 356 days with a mean of 79 days.

One hundred and thirty nine patients (89.7%) underwent sapheno femoral ligation LSV stripping and avulsions. This included 69

Table 1 Age Sex Distribution

	Age (years)						
	<29	*30-39*	*40-49*	*50-59*	*60-69*	*>70*	*Total*
Male	6	20	14	16	9	4	69
Female	10	17	29	21	9	0	86
Total	16	37	43	37	18	4	155

(49·6%) bilateral surgery 38 (27·3%) right sided surgery and 32 (23%) left sided surgery Seventeen (12·2%) were repeat procedures for recurrent varicose veins A further seven patients (4·5%) underwent short saphenous ligation and avulsions and nine (5·8%) avulsions only following a previous sapheno femoral ligation This distribution corresponds closely with the 48% bilateral 23% right sided 25% left sided and 9% repeat sapheno-femoral ligations and 4% short saphenous ligations undertaken in the group of patients who failed to reply

Seventy (42·5%) of the operations were performed by the consultant (AJW) 54 (34·8%) by a registrar and 31 (20%) by a senior house officer (SHO) Five (9·3%) of the operations performed by the registrar and nine (29%) of the operations performed by the SHO were personally supervised by the consultant

One hundred and fifty one patients (96·8%) felt that the proposed surgery and post operative treatment was adequately explained in outpatients and rose to 153 (98·7%) who felt that the operation was adequately explained while an inpatient

Almost all (99·4%) understood the information/advice sheet and most (92·2%) felt that any remaining queries had been answered prior to discharge

All but four patients were discharged one day postoperatively One hundred and thirty five (87·1%) thought the length of hospital stay about right while 20 (12·9%) thought this too short No patient felt that their stay was too long

One hundred and forty nine patients (96·1%) complied fully with the postoperative advice on exercising driving dressings and TED stockings as detailed in the information sheet (*Figure 2*) In particular 148 (95·5%) wore the TED stockings for two or more weeks

During the first two postoperative weeks 53 (32·2%) experienced no symptoms of note Reported problems included 39 (25·2%) suffering pain or discomfort in their legs 17 (11%) bleeding from the stab wounds 52 (33·5%) excessive bruising 38 (24·5%) numbness in the calf or foot seven (4·5%) wound infections and four (2·6%) superficial thrombophlebitis

Following discharge 58 (37·4%) consulted their own GP with problems Half of these merely required reassurance that all was well However 12 were prescribed antibiotics six analgesia six prolonged use of the TED stockings six wound dressings two bed rest for one week and one had a lymphocele drained.

Six months after discharge 123 (79·4%) patients were pleased with the results of their surgery Twenty nine (18·7%) were not fully satisfied Symptoms present at six months included continued ache or leg discomfort 27 (17·4%) skin discoloration 26 (16·8%) persistent or residual varicose veins 21 (13·5%) prolonged numbness of the calf or foot 12 (7·7%) ankle swelling seven (4·5%) and groin incision problems three (1·8%) — one wound sinus one lymphocele and one groin abscess.

A total of 17 (11%) patients were referred back to the surgical clinic Most were for residual varicose veins but other problems included a groin abscess a wound sinus a haematoma and a lymphocele Of those re-referrals concerned with residual varicose veins four (2·6%) underwent further surgery One required revision of the sapheno femoral ligation one a short saphenous vein ligation and two had further stab avulsions only

DISCUSSION

Using postal questionnaires to assess the results of surgery in the present study had the advantage of providing a large amount of data rapidly and with minimal resources The validity of data collected by this method has been clearly established Larson *et al*[4] compared the relief of symptoms as perceived by the patient with clinical assessment of residual varicosities Similarly McMullin *et al*[5] compared perceived symptomatic improvement with duplex scanning

1 Your bandages applied postoperatively will be changed to below knee stockings These should be worn during the daytime for the next two weeks They can be taken off at night and to bathe At the end of two weeks you don t need to wear them unless you think they are giving you some comfort when you can wear them for as long as you like

2 You may get into a warm bath but not too hot to bathe any time after surgery DO NOT try to remove the paper stitches on your legs These will come off in their own time Early removal might lead to bleeding

3 There will inevitably be some bruising of your legs which will gradually settle over the next few weeks

4 You are advised to walk as much as you can When not walking please sit with your legs elevated above the level of your hips DO NOT stand still or sit with your legs down for long periods

5 There are no stitches which need to be removed from your groin except in exceptional circumstances when I or my staff will inform you of that

6 You are advised NOT to drive for the next 10 days to two weeks after your surgery as this may jeopardise your insurance situation Please check with your company

7 Should you develop problems immediately after your operation please contact the hospital and ask for your ward The nurses or a doctor should be able to give you advice

8 You may experience numbness in the legs due to damage to small skin nerves This usually wears off in a few weeks Occasionally people are left with small areas of permanent numbness

Figure 2 Postoperative Advice Sheet

and photoplethysmographic measurement of venous refilling time In both cases a significant correlation was found between both methods of assessment The response rate of 73 8% in the present survey compares favourably with rates of 60%[7] and 66%[11] previously reported for questionnaire based studies This high response rate probably ensures that a representative sample of our patients has been obtained although this cannot be established for certain There was no significant difference seen in the type of surgery performed in responders or non-responders to the postal questionnaire

In this study there is a large time range between patients GP referral and the outpatient consultation (18 1391 days) This is due to participation in a local NHS varicose vein waiting list initiative those waiting longest were transferred from other consultants lists The longer intervals between outpatient consultation and surgery are accounted for by patient request and anaesthetic and medical outpatient assessment

O Shaughnessy *et al*[8] reported that the distribution of operations between consultant registrar and SHO was 39% 36% and 25% respectively They found a significant correlation between the seniority of the surgeon operating and the likelihood of symptom recurrence In this study 42 5% of operations were performed by the consultant and a further 11 7% were directly supervised i e the consultant was directly involved in 54 2% of the operations In the absence of consultant supervision the procedures were performed to agreed technique hopefully achieving a uniform standard of surgery

Direct comparison of this work with results of other studies looking specifically at saphenofemoral ligation and LSV stripping is difficult due to our short follow up period and different classifications of outcome

We found that at two weeks after surgery early morbidity related to varicose vein surgery is high — only 38% of patients claim to be symptom free Pain bruising and numbness are common The wound infection rate of 4 5% compares favourably with that noted by Larson *et al*[6]

It is interesting to note that 18 7% of all patients needed some form of treatment from their GP for other than recurrence of their veins Clearly close communication between surgeon patient and their GP is essential to identify these problems and either prevent them or prepare the patient for them

In this study 79 4% of patients were satisfied with the condition of their legs at six months This was defined as resolution of their presenting symptoms with minimal or no varicose veins O Shaughnessy *et al* reported an 86% marked

or moderate improvement in patient symptoms one year after surgery. Unfortunately they offer no definition of these terms. With prolonged follow up this figure dropped to 78% 75% and 74% after three five and ten years respectively. Similarly Larson *et al*[14] quoted an undefined 86% excellent or good result as judged by the patient at ten years. This compared closely with the 85% excellent or good result (no or scattered residual tributaries less than 3mm in diameter) found on clinical examination of the same patients. Using this same classification scheme Tanabe found excellent results on examination of his patients after five years. Holme *et al*[12] reported a 94% excellent or good result (resolution of symptoms with no or minimal residual varicosities) at only three months post surgery. We found that patients often indicated satisfaction with the results of their surgery despite also mentioning residual postoperative problems or symptoms.

At six months the paraesthesia rate was 7.7% compared to the 5.7% and 6.5% in previous papers[7,11] describing downward stripping to the knee.

Our results show that at six months 13.5% of our patients complained of persistent or residual varicose veins. We believe that there is no distinction between residual veins and recurrent veins. Although the follow up was only to six months we saw only one true recurrence attributable to poor initial sapheno femoral ligation. The three other cases requiring re operation had minor residual veins not especially prominent at initial surgery but more visible once the main varicosities had been dealt with.

In conclusion this study provides useful data about the early morbidity associated with the recommended treatment of sapheno femoral incompetence. Despite high satisfaction rates the frequency of minor postoperative problems is also high. We believe that clear pre and perioperative communication will help to prepare patients for their surgery and prevent unreal expectations. A detailed information sheet is an important part of this process. Our results also suggest that our patients will require even more careful explanations if we are to introduce day case surgery for saphena-femoral ligation and stripping of varicose veins: the benefits of which they are yet to be convinced.

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A year of laparoscopic general surgery at RNH Haslar

M J Midwinter

Abstract

Laparoscopic general surgery at RNH Haslar started in October 1992. A review of the procedures undertaken in the first year (October 1992 October 1993) and comparison with some published series is presented.

INTRODUCTION

Laparoscopy was first performed by Georg Kelling in 1901 on a dog and on man by Jacobaeus.

A low level of interest continued with it being largely confined to gynaecological practice. The development of rod lens systems, computer chip TV and camera technology allowed the possibility of more involved surgical procedures to be undertaken.

The first laparoscopic appendicectomy in man was performed in 1983 by Semm and the first laparoscopic cholecystectomy in man by Mouret in 1987.[1] Since this time the laparoscopic approach to cholecystectomy has been widely adopted in many centres. The scope of laparoscopic surgery has also increased with most intra-abdominal organs being tackled for a wide range of pathology and the parallel development of thoracoscopic surgery.

There has been some controversy surrounding these developments with particular concern about the use of laparoscopic approach for cancer surgery.[2] The onus must be on demonstrating that results from laparoscopic surgery are as good as an open approach with no increase in complication rates.

Laparoscopic general surgery was introduced at RNH Haslar in 1992. It is obviously important to closely monitor the results of new surgical techniques and compare the results with both traditional surgical practice and experiences from other centres.

Surgeon Lieutenant Commander Midwinter is currently appointed to the surgical department RNH Haslar.

Over the study period October 1992 to October 1993 114 general surgical laparoscopic procedures were performed at RNH Haslar. They break down into the following groups: cholecystectomy 54, appendicectomy 27, inguinal hernia repair 14, adhesiolysis/investigation 14 and miscellaneous laparoscopic procedures 5.

LAPAROSCOPIC CHOLECYSTECTOMY

There were 54 laparoscopic and 29 open cholecystectomies performed in the study period. The age range of the patients undergoing laparoscopic surgery was 23 to 78 years old. Peroperative choledochography was selective on clinical grounds (as for open cholecystectomy) and was carried out in four (7·4%) laparoscopic operations. The mean length of surgery has shown a steady decline from two hours in October 1992 to one hour in October 1993 (*Figure 1*).

When compared with open cholecystectomies performed over the same time period, excluding those patients who had their common bile ducts explored, the complication rates were not significantly different (7·4% n=4 versus 10·3% n=3, chi squared $p>0.5$). The complications are compared in *Table 1*. The two groups were neither matched nor randomised. The mean length of hospital stay between the two groups was significantly different with 2·9 days for the laparoscopic group versus 6·1 days for the open group ($p<0.01$, Kolmogorov Smirnov test) (*Figure 1*). This mean hospital stay compares favourably with published series (*Table 2*).

A conversion rate from laparoscopic cholecystectomy to an open operation of 5·5% (n=3) was experienced, which is in line with published series (*Table 2*). The reasons for conversion were excessive adhesions, bleeding and doubt about the ductal or vascular anatomy.

LAPAROSCOPIC APPENDICECTOMY

There were 27 laparoscopic and 11 open

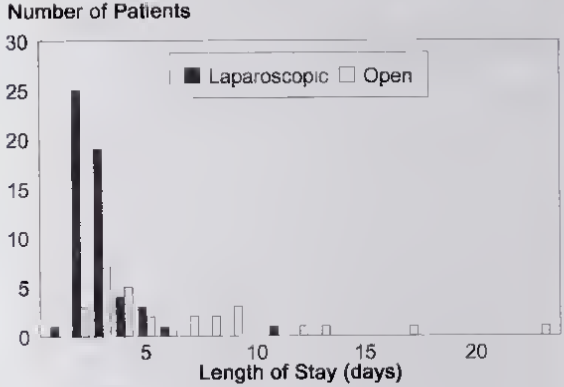

Figure 1 Number of patients against length of hospital stay for laparoscopic and open cholecystectomy

Table 1 Complications of cholecystectomy

Complication	*Laparoscopic cholecystectomy*	*Open cholecystectomy*
Wound	2 port site infections 1 rectus sheath haemetoma	1 haemetoma
Retained stone	1 intra hepatic stone treated by ERCP	–
GI obstruction	–	1 post op small bowel obstruction
Antibiotic associated		1 pseudomembranous colitis

Table 2 Mean hospital stay and conversion rate after laparoscopic cholecystectomy

Reference	*Number of patients*	*Mean hospital stay (days)*	*Conversion rate (%)*
Peters *et al* [4]	100	1 1	4 0
Southern Surgeons [5]	1518	1 2	4 7
Grace *et al* [17]	44	1 5	14 0
RNH Haslar	54	2 9	5 5
Cuschieri *et al* [18]	1236	3 0	3 6

Table 3 Complications following laparoscopic and open appendicectomy

	Laparoscopic appendicectomy	*Open appendicectomy*
Wound	2 port side infections	3 wound infections 1 deh scence
Respiratory	–	4 chest infections (1 respiratory arrest)
Cardiovascular	–	2 LVF
Genitourinary	–	1 UTI
Death	1 secondary to stump leak 11 days post op	–

Table 4 Laparoscopic versus conventional appendicectomy

	Laparoscopic appendicectomy	*Open appendicectomy*
Inflamed appendix (%)	88 (81)	87 (90)
Complication rate (%)	16 (11)	21 (17)
Wound infection rate	2 (7)	13 (4 2)
Mean operating time (min)	76 (78)	46
Hospital stay (days)	3 76 (2 7)	4 22 (6 1)

Reference Tate J J T Chung S C S *et al Br J Surg* 1993 80 761
(Results of present study from RNH Haslar in parentheses)

appendicectomies in the study period The age range of the patients was 13 to 67 years old

The appendix was inflamed (histologically confirmed) in 81% (22 patients) compared to 90% (64 patients) in those removed by the open approach The complication rates of 11% (n=3) for the laparoscopic appendicectomy group and 17% (n=12) for the conventional appendicectomy group are not significantly different (chi squared p>0 25) A summary of the complications is shown in *Table 3* The death occurred in a 48 years old man who suffered from chronic obstructive airways disease and was an abuser of alcohol Eleven days post operatively after discharge from hospital he developed peritonitis Laparotomy confirmed a stump leak He unfortunately died despite surgical intervention and intensive care support

The mean length of hospital stay after laparoscopic appendicectomy was shorter than after open appendicectomy (2 7 versus 5 1 days) although this was not significant (p>0 05 1 tailored Kolmogorov Smirnov test) These comparisons are with open appendicectomies performed over the same time period but are neither matched nor randomised The mean length of the laparoscopic surgery was 1 3 hours 7 4 percent (n=2) were converted to an open operation These figures compare well with those published by Tate *et al*[6] shown in *Table 4*

LAPAROSCOPIC INGUINAL HERNIA REPAIR

There were 14 laparoscopic and 200 conventional inguinal hernia repairs in the study period The conventional operations were either Bassini Shouldice or darn repairs depending on consultant preference Three patients had bilateral laparoscopic repairs The age of those patients undergoing laparoscopic repair was 22 to 85 years

There were no complications in the laparoscopic group compared to a complication rate of 6 5% (n=13) in the open herniorrhaphy group The mean length of hospital stay was not significantly different in the two groups (2 1 days for the laparoscopic group versus 3 0 days for the open group p>0 05 1 tailed Kolmogorov

Smirnov test). The mean operative time for a laparoscopic repair was one hour. This compares with the figures reported by Goodall[7] of a complication rate of 13% after laparoscopic repair, a post operative stay of 1·3 days (note our figures are total length of hospital stay with the patients admitted the day prior to surgery) and a mean operating time of 50 minutes. Goodall's figures are based on a series of 60 patients including three recurrent hernias and three femoral hernias.

All our laparoscopic repairs were followed up at six weeks post operatively and no early recurrences were found in the patients in the study period.

INVESTIGATIVE LAPAROTOMY

Fourteen patients, age range 21 to 68 years, underwent laparoscopy for unexplained abdominal symptoms.

Six had entirely normal laparoscopies. Four had adhesions which were divided with symptomatic benefit in two at six weeks post operatively. Three patients had gynaecological pathology found (all benign) and one patient had carcinoma peritonei. There were no complications.

MISCELLANEOUS LAPAROSCOPIC PROCEDURES

These are presented for completeness although the small number and diverse nature preclude any formal analysis. They represent the less widely accepted laparoscopic operations.

The procedures were as follows:

★ Two laparoscopically assisted abdomino perineal excisions of the rectum for carcinoma.
★ One laparoscopically assisted anterior resection for tubulovillus adenoma.
★ One laparoscopically assisted right hemicolectomy for carcinoma.
★ One laparoscopic bilateral truncal vagotomy.

In the laparoscopically assisted operations the mobilisation was undertaken laparoscopically but the procedure completed through smaller or differently sited abdominal incisions than in conventional approaches. There were no major complications. Acid suppression was confirmed post operatively after the truncal vagotomy by a pentagastrin test.

DISCUSSION

The purported advantages of laparoscopic surgery are a shorter hospital stay,[8] a quicker post operative recovery,[9] fewer post operative complications,[10] less surgical trauma as measured by objective criteria,[11] the ability to undertake more accurate intra operative staging,[8] and an improved cosmetic result.

Of these we were able to confirm from our series a shorter hospital stay due to a quicker post-operative recovery following laparoscopic cholecystectomy compared to the conventional operation. Of interest to the patient and employer is the time to return to full activity and work after laparoscopic compared to conventional surgery. This has not been examined here but is obviously worthy of investigation in the future.

There are recognised disadvantages from a laparoscopic approach. These include intra operative complications due to the raised intra abdominal pressure,[11] (respiratory restriction, increased DVT risk); the inability to palpate hollow viscera (hence missing occult tumours) and the seeding of malignancy at port sites.[8] The role of laparoscopic surgery for malignant disease remains controversial.[7]

There are obvious implications for training and theatre usage as most laparoscopic procedures take longer than their open equivalents and throughput could be limited by theatre availability. As more surgery is performed laparoscopically, surgical trainees could lose conventional surgical skills due to lack of experience. This could distort future comparisons between open and laparoscopic procedures.

The onus must be on demonstrating that a laparoscopic approach is as safe and effective as the conventional open procedure. There is a growing impetus from within and outside the surgical community for controlled trials in designated centres for new laparoscopic operations before the widespread adoption into practice, possibly with a form of licensing akin to drug licensing. Additional training in order to be able to practice laparoscopic surgery may also become mandatory.

Comparisons between laparoscopic and open surgery will need to be continued as complications rates and types will vary as operations become established and a wider range of patients are accepted for laparoscopic surgery. Formal trials of new laparoscopic procedures will also need to be considered.

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Training

Shipshape and Bristol Fashion: A personal view of higher professional training in Bristol University, Department of Surgery

J K Campbell

GO AWAY AND OON T COME BACK UNTIL YOU HAVE GROWN UP

In September 1992 I was appointed to the University of Bristol for higher professional training. Now that time has come to an end it seemed a good time to reflect on what I have gained during my stay in Civvy Street. The time has shot by which may generally be regarded as a good indication that it was all worthwhile. It certainly has been a most rewarding time.

In this report I will describe the nature of my training and experience the good things and the bad things and will offer pearls of wisdom to aid those going to undertake training intwith the Royal Naval Medical Service

OO I HAVE TO GO AWAY?

Training outside the Royal Naval Medical Service is an essential part of postgraduate development. The main moving force behind it is the need to adhere to the requirements of the postgraduate specialist training bodies. There is however an additional benefit. If all of our training were to take place within the Service it would be very easy to become very introspective and almost incestuous. Fresh ideas and outlooks are needed to keep the RNMS in tune with the rest of the health service. This is a two way process we take new ideas and attitudes to the NHS.

During my two years in the University of Bristol I spent the first year in full time clinical surgery in my chosen area of specialty upper gastrointestinal and hepatobiliary surgery. The second was spent mainly in research. Still in the same area of specialty. Both clinical work and research were undertaken in the Bristol Royal Infirmary under the direction of Professor J R Farndon and Mr D Alderson Senior Lecturer.

It is essential that the trainee's employment has been well planned before arrival. To be of any great value the training post should be in a definitive appointment rather than as an 'add-on extra'. This requires a considerable amount of planning on the part of the Service consultant adviser and the postgraduate tutors within the region as HPT appointments are made on a regional basis. This planning may take six months or more so bids must be entered early. They are always wary of denying a valuable training post to one of their own whom they protect fiercely. This matter must be approached sensitively. I found that the University at Bristol and the (now defunct) South West region were most accommodating even to the extent of changing other senior registrars' training rotations to accommodate me. Probably the best selling point is that the addition of a Service trainee allows one of their own trainees to take some time off service and pursue specialist training in a place of interest for example overseas appointments. The other big selling point in these days of Trusts and budgets is that they effectively acquire a free doctor. Service doctors are awarded an honorary contract which frees the Trust from any financial liability whatever. This can be a two-edged sword more of this later.

Surgeon Commander Campbell is currently appointed to RNDHU Derriford Plymouth

I was fortunate enough to achieve my [illegible] in striking a one of the most sought after senior registrar posts in the regional referral centre for upper GI and hepatobiliary surgery. The Bristol Royal Infirmary houses a busy academic clinical department within the teaching hospital environment. The professional unit functions as a tertiary referral centre for the region and receives patients from other regions. Areas of special interest and experience included oesophageal surgery, upper gastrointestinal malignancy, hepatobiliary surgery, pancreatic surgery, splenic surgery, surgery for obesity and laparoscopic/minimal access surgery. There is also a strong endoscopic practice including diagnostic and interventional ERCP in which I became trained to a competent standard. During this attachment I increased my experience in upper gastrointestinal, hepatobiliary and laparoscopic surgery, aided by a large clinical throughput. I gained experience in reconstructive biliary surgery and gastric oesophageal resection. Lower gastrointestinal surgery formed a smaller part of the clinical throughput generated by emergency general surgical takes and from the general clinic. This included rectal resections.

THERE'S A WHOLE NEW WORLD OUT THERE BOY

There are certain things to be learnt about life in a large teaching hospital. For most of us it is many years since we left our alma mater proudly clutching our degrees in Medicine. Memories of teaching hospitals are usually befuddled by a haze of alcohol and viewed entirely from the perspective of bakyon student days. In the University of Bristol I had the opportunity to view it from the other side of the lectern.

Doubtless the key feature of a teaching hospital is the presence of medical students and specialist trainees in large numbers. For those who enjoy teaching, this can be a great boon. I do so. I was as happy as a sand boy. I had the opportunity to teach at all levels of undergraduate education from giving lectures in the assembled masses in the university to the preclinical medical, dental and BSc students to small groups and one-to-one ward and theatre based teaching. This has certainly enhanced my presentation and teaching techniques and has led to a personal interest in undergraduate and postgraduate education. Medical schools are now changing the approach to student learning, moving rapidly away from the fact cramming days that we all know and towards problem and system based learning. This is much of a challenge to the mentors [illegible] is to the students. It has been rewarding to watch students progress from enthusiastic third years to the house officers of today, during my time with them.

Postgraduate teaching also formed a significant part of the workload. There are 12 SHO surgical trainees in the Bristol Royal Infirmary, of whom six are working in general surgery at any one time. They tend to have had very little experience and, as a rule, have done less cutting than their Naval counterparts. They are also a few years younger and consequently less worldly wise than a Naval trainee. The objective of their SHO training time is to take them up to FRCS (Int) standard. To achieve this, there is a structured teaching programme undertaken by the senior registrars and lecturers. In addition, there is a twice yearly FRCS course that attracts candidates from all over the country. The training appears to be working, as Bristol SHOs have had a 95% first time pass rate in the FRCS.

It is useful to take the opportunity, where possible, to lecture or teach groups outside the university. Lectures to GPs present a challenge and can be very useful in helping to focus your own thoughts on certain subjects. They are a vibrant audience and can ask some very pertinent and probing questions. One small but important point is that you are paid for lectures to GPs when they form part of their continuing medical education (CME). It is wise to amass or borrow a collection of Naval or Service orientated slides. One of the more popular lectures in most groups, medical and non-medical, is 'A Life on the Ocean Wave', pretty pictures of ships and salty dits always go down well. Most civilians have little concept of the military lifestyle and welcome such talks as a diversion from the more usual humdrum lectures and presentations.

The other great feature of a university is that departments are geared up for research. There are laboratory staff, laboratory spaces, research funds, departmental libraries, technical and administrative support — all of the components necessary to practise research. More importantly, the atmosphere is there to promote useful research. Colleagues are supportive and share the frustrations of the budding researcher. There are pockets of knowledge and expertise that can be tapped when additional help is required. When there is only a short time available, it may be possible to be fitted into existing research projects, so that there is no need to re-invent the wheel. Most projects starting *de novo* take at least six or nine months to start producing any

useful data. They usually take two years to complete. There are few research fellows in general surgery in the University of Bristol most of whom are doing an MD. Sadly my time in research was too short to undertake an MD. I was however able to undertake a number of clinically related projects and see them through to completion during my research time.

SURVIVAL GUIDE FOR UNWARY

A ward of warning about the NHS. They are all lovely kind and caring people but have a bit of a blind spot when it comes to parting with money. All Service trainees are awarded honorary NHS contracts which frees the Trust from any financial liability. It does not take long for the accountants and medical personnel staff to spot that they have a middle grade doctor entirely free of charge. Consequently they pay the Service trainee the same whatever duty rota is to force it to nothing and so have little compunction about putting on extra duties especially if it avoids hiring a locum. It seems a logical thing to do in their minds and who can blame them? Consequently the Service trainee may find him or herself being severely put upon. Some Trusts will pay locum fees for extra duties although this is not universal. In the event of disagreement they need only to point out that your contract is an honorary one. I have been stung in this way and when asked to do extra duties politely but firmly declined.

One other striking difference between the NHS and the RNMS is that we administer ourselves and the NHS have administrators. One must be prepared to receive what sound like very autocratic decisions from the administration departments. This is where it helps to be a Service person as one can either feign ignorance of politely ignore any instructions that seem to be ludicrously bureaucratic.

It takes very little time to acclimatise to being a full time civilian. It is surprisingly easy to forget that one has taken the Queen's shilling as the amount of Service contact is often very limited. The occasional communication does emanate from the office of the Professor passing on information or dropping the occasional bombshell. It is equally important to maintain contact oneself if only to remind the Service that you are alive. Service gossip tends to pass one by the Service News section in the *Journal of the Royal Naval Medical Service* assumes increasing importance if only to find out who is still around.

Service administration and forms assume an increased importance. There are two types of Naval officer those who understand Service forms and those who do not. I am unequivocally in the latter group at the most advanced level. The majority of communication occurs directly with HMS Centurion. There is a real knack in doing this effectively to circumvent the dreaded answerphones. Keep a card file or database of all extension numbers to hand. One well-kept secret is that many departments in HMS Centurion have direct GPO lines that are much more efficient and convenient when calling from the outside world. Never call in the afternoon. Often the advice given is to call in to your UPO. As the nearest UPO to Bristol is 90 miles away this can present a problem. There is a real opportunity for an enterprising young Supply Officer to produce a do it yourself UPO kit containing a list of step by step instructions and a bundle of the necessary forms. Many Naval personnel have little idea what they may or should be claiming some written instruction would help these non cognoscenti. Some Supply Officers may feel that this is letting the cat out of the bag. When all else fails it is best to go straight to the top and call your friendly CPOCQA who will keep you in line. There is a LWRN in the Dean's office who understands all about Service administration and is valued above the price of rubies.

Finding suitable accommodation need not be too trying. If there are married quarters in the town then there is little choice or problem. Usually there are none so one must find a private rental and apply for excess rental allowance (ERA). With very few exceptions the cost of privately rented accommodation will exceed standard married quarter charges. The rules for applying for ERA are written down in the relevant BR but do leave some room for interpretation. The key point is that the rent charged for the property must be deemed to be reasonable for that area by the Area Housing Officer. This is a subjective assessment on his or her part. There is a difficult moment of decision when having chosen a residence that seems to be ideal the worry sets in as to whether it will be deemed to be too expensive. I need not have worried. The AHO readily approved my chosen house in Clifton at a rental of £700 per month which is the normal rate for that area.

It is easy to do oneself down and aim for cheapness when one should be choosing a residence appropriate to the circumstances. I.e.

proximity for on call commitment housing of a standard comparable to a married quarter

TELL ME OO NAVAL OOCTORS GO TO MEOICAL SCHOOL LIKE WE OO?

As a member of the Service there is always a sensation of being the odd man out Other clinicians and research fellows are accustomed to working in the university environment with its own set of rules and systems of administration The Service trainee is effectively bound by these same rules although they cannot be applied quite so rigidly You are certainly perceived as being a little bit different by seniors peers and juniors There is a stunning ignorance among civilians about the ways of the Service and the nature of the work They are always interested to hear what it is that we actually do and are usually quite surprised to find that it is much the same as they themselves do

Whenever there is one of those funny little jobs to be done the Service trainee tends to win it Arranging speakers for postgraduate rounds organising meetings co ordinating audit meetings looking after visiting professors these are the things that tend to come the way of the Service trainee This is one of the situations that can quite unwittingly be abused by the NHS or university One needs to be fairly sensible about taking on too many things there are times when it is best just to say No thank you There is a logic in using the Service trainee in this way as we tend to be reasonably good at organising things

Civilians are often so over awed that someone has made a decision that they usually do exactly what they are told

HOME IS THE SAILOR HOME FROM THE SEA AND THE HUNTER HOME FROM THE HILL

It seems an age since I was a senior registrar in Her Majesty s Royal Naval Hospital wherever Since then I have defined my interest and specialty learned about the ways of academia and research and made a multitude of friends and contacts Having sampled life in the NHS it is clear that the grass is not necessarily any greener merely a different shade of brown I look forward to returning to the RNMS bringing new ideas and outlooks with me I hope that my experiences and observations will be of value to those who follow I remain eternally grateful to Professor J R Farndon Mr D Alderson Mr P Durdey Mr A J Webb and the rest of the Staff at Bristol Royal Infirmary and the University of Bristol I would commend any trainee from whatever source to consider the merits of Bristol Un versity It is indeed shipshape and Bristol fashion with a fine ship s company

Learning in the clinical area: The Portsmouth Partnership experience

S Smith

Abstract

This paper outlines a new innovative radical and challenging degree programme implemented by the University of Portsmouth The Partnership Programme implemented by the University of Portsmouth has its first intake due to begin in October 1992 The course is primarily aimed at students in full time employment Full time submission of a portfolio students can obtain a degree in two years St Johns undertake part time university modules and learning projects at the workplace the latter forming up to 60% of their total credits Presently there are only two similar course frameworks in the United Kingdom

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INTRODUCTION

Professions in the nursing profession are becoming more and more competitive Nurses can no longer sit back making no attempt to further their knowledge base and still expect to have

the edge in an interview [illegible] keep their registration. If nurses [illegible] themselves professionals then continuation in the learning cycle must take place amongst [illegible]

The Partnership Programme at the University of Portsmouth was brought to my attention by a lecturer at the local school of health studies. Being keen to obtain a degree [illegible] remuneration yet aware of restrictions for study leave and accompanying service commitments the programme appeared ideal.

The course gave me the opportunity to learn a varied and different programme from the one taught on a normal degree. It accepts the fact that nurses continually learn in the clinical area and not purely in the academic lecture hall. The course recognises the direct connection between work based learning (WBL) achievement and its added value for academic progression. It has four main components:

— The Learning Contract
  Work Based Learning
  University units of study
— The Learning Support Group

THE LEARNING CONTRACT

For each semester or year of study a learning contract is produced. Learning contracts enable students to plan, manage and reflect upon the learning process. Students workplace mentors, tutors, employees and other parties together enable written agreements to be made. The learning contract states the programme of study that the student is proposing, the thinking and justification behind the proposal, the time within which the programme is to be completed, the resources necessary to achieve the success, the type of evidence that will be presented to assess the learning outcomes achieved, the criteria by which achievement will be judged and graded and the credits to be awarded for each piece of work. The assigning of potential credits to WBL is formally completed by the board of examiners when they consider contracts for approval. Learning contracts are self assessed by the student. This is divided into the formative mid-semester review and the summative end of the semester review. Work based learning and learning support group projects in conjunction with university study are documented in the learning contract.

WORK BASED LEARNING (WBL)

This element of the programme can account for 60% (on average) of a student's study programme. Work based learning is the achievement of planned learning outcomes using workplace resources based on a given task or function. The ethos of the Partnership Programme is that tutor, mentor (on behalf of employer) and student are involved in the negotiation of the WBL in context and scope. It is important that students have the leading role so that they take responsibility for their learning and development. WBL is not simply a work placement, not a big book exercise, nor is it a work book, tick the box and get the supervisor to sign game. Finally the concept of WBL is not similar to the final year project or dissertation in a conventional degree programme.

With the recent introduction of computerised care plans in the Royal Naval Hospital (RNH) Haslar a WBL project was set to critically examine the use of care plans in the clinical area. This entailed personal research and theoretical input. The result was a 10 000-word document which can be used by the hospital management to analyse the efficiency and opinions of both staff and patients of care plans and the nursing process in RNH Haslar. Changes or decisions can subsequently be actioned if appropriate. This is one example of a WBL project that was carried out in the two-year duration of the course.

UNIVERSITY UNITS OF STUDY

University units of study are chosen at the personal interest and relevance of the student. The individual student can latch on to full or part time course modules and obtain the appropriate credits that are awarded upon successful completion of an exam-mation or accompanying essay.

THE LEARNING SUPPORT GROUP (LSG)

The LSG is the final learning component to the Partnership Programme. The three purposes of the LSG are to develop:

— a supportive peer group for partnership students who may otherwise have felt isolated when they join established classes of students who know each other
— active learning skills including the abilities associated with learning contract negotiation and management
— professional competencies to a level commensurate with academic achievements.

The LSGs also become social gatherings enabling students to share their grievances and successes. The meetings also create opportunities for tutors to communicate and explain course requirements, assessment and criteria.

WORK BASED MENTOR

The allocation of a work based mentor is an essential component to the course On commencement of the course the Staff Development Officer at RNH Haslar volunteered as my mentor Her contribution to the course was invaluable The mentor as tutor at work is pivotal to the university's control of the quality of work based learning experiences The mentor is the most accessible to act in a tutorial role Certainly in my case the mentor brought knowledge of the work area alongside experience and expertise in the ward clinical area In order for the mentors to perform effectively and efficiently they are supported by the university mentors workshop and published training material A certificate of mentorship programme is also offered

Successful completion on the Partnership Programme will achieve a degree relevant to the clinical environment within which the student works As well as increased clinical knowledge the student has the opportunity to develop in confidence self esteem and critical thinking skills I feel that this type of programme needs to be expanded upon nationally to enable more nurses to obtain a relevant degree and to take charge of their own learning without the need to leave their present job

ACKNOWLEDGEMENT

To Chief Nursing Officer P Hambling as the Staff Development Officer at RNH Haslar who was my work based mentor for the two year duration of the course

REFERENCE

1 The Partnership Project and The Partnership Programme Frank Lyons 1991 11

ABSTRACT

Broome J R, Dmitka A J, McNamee G A Exercise conditioning reduces the risk of neurologic decompression illness in swine *Undersea Hyperbaric Med* 1995 22(1) 73 85

During development of a pig model of neurologic decompression illness (DCI) we noted that treadmill trained pigs seemed less likely to develop DCI than sedentary pigs The phenomenon was formally investigated Twenty four immature male castrated pure bred Yorkshire swine were conditioned by treadmill running while 34 control pigs remained sedentary All pigs (weight 18 75 21 90kg) were dived on air to 200 feet of seawater (fsw) in a dry chamber Bottom time was 24 minutes Decompression rate was 60fsw/min Pigs that developed neurologic DCI were treated by recompression Pigs without neurologic signs were considered neurologically normal if they ran on the treadmill without gait disturbance at one and 24 hour post dive Of the 24 exercise conditioned pigs only 10 (41 7%) developed neurologic DCI compared to 25 of 34 (73 5%) sedentary pigs ($\chi = 5\ 97$ $P = <0\ 015$) Neither mean carcass density (adiposity) nor mean age were significantly different between groups No patent foramen ovale was detected at necropsy An additional control group of 24 pigs was dived to clarify the influence of weight The results suggest that the risk of neurologic DCI is reduced by physical conditioning and the effect is independent of differences in age adiposity and weight

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Medical Ethics and Law

Pitfalls in Accident and Emergency Departments

Alexandra S Campbell

INTRODUCTION

An Accident and Emergency Department can be a medico legal minefield especially for inexperienced doctors This article outlines a few of the areas which regularly cause problems

Confidentiality
Consent to treatment
Record keeping
Writing reports

Doctors should follow standing orders for the department and if in doubt should seek help from more experienced members of staff The medical defence organisations are happy to discuss ethical and practical problems of a medico legal nature facing their members

CONFIDENTIALITY

The General Medical Council (GMC) has set out guidelines on the standard of professional conduct expected from doctors These are to be found in its blue booklet *Professional Conduct and Discipline Fitness to Practise* which is published by the GMC and sent every year to registered medical practitioners The advice on standards to be expected in terms of professional confidence is set out in paragraphs 76 to 91 of the booklet

Doctors working in accident and emergency departments are sometimes faced with the dilemma of deciding between their duty of confidentiality to their patients and their civic duty to disclose information Disclosing information without the patient s consent should not be undertaken lightly Before doing so a doctor must decide whether he is prepared to explain and justify that decision whatever the circumstances of disclosure This justification at its most extreme may take place at a Professional Conduct Committee Hearing of the GMC

Doctors have a duty to satisfy specific statutory requirements including the notification of certain infectious diseases and the reporting of people known or suspected to be addicted to controlled drugs There is a duty to share information which may lead to the identification of a driver involved in a road traffic accident Please note that this last duty is very narrowly defined and there is no obligation to disclose information about passengers pedestrians bystanders etc

Junior doctors in accident and emergency departments are a fast and reliable source of information about victims of accidents and assaults The patient s consent to pass on this information should be obtained before doing so

CONFIDENTIALITY AFTER THE DEATH OF A PATIENT

A patient s death does not absolve a doctor from the duty of confidentiality However there is an additional duty to report certain deaths to the Coroner or in Scotland to the Procurator Fiscal In England and Wales further advice and information can be obtained by contacting the local Coroner s Officer In Scotland the Crown Office has published a booklet entitled *Death and the Procurator Fiscal* copies of which may be obtained from the local Fiscal If a death is to be reported to the Coroner or the Fiscal this should be done at the earliest practical opportunity particularly if it is suspected that the patient s injuries or illness may be related to criminal activity

CONFIDENTIALITY AND UNFIT DRIVERS

Occasionally doctors are faced with the problem of a patient who drives when he is not fit to do so This may be an epileptic patient who

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continues to drive even though his seizure activity is not controlled by medication. Drivers are required by law to inform the Driver and Vehicle Licensing Authority (DVLA) in Swansea if they suffer from any physical or mental disability which is likely to last more than three months and which will affect their fitness as a driver.

The patient should be advised to contact DVLA and a note made to that effect on the A & E card, a copy of which should go to the general practitioner. If the patient is a regular attender who has not informed DVLA, the next stage is to offer to write on his behalf. If he refuses, the doctor may write to the medical officer at DVLA with the patient's name, address and the statement that, in my opinion the above named is unfit to drive because.....

This is one of the rare occasions in which civic duty may outweigh the duty of confidentiality. Further information may be obtained in *Medical Aspects of Fitness to Drive* published by the Medical Commission on Accident Prevention and the *At A Glance Guide to the Current Medical Standards of Fitness to Drive* issued by the Medical Advisory Branch at DVLA.

CONFIDENTIALITY IN COURT

Once in the witness box giving evidence in a case, doctors are protected from allegations of defamation of character or breach of confidentiality. This reduces the anxiety about being sued or being reported to the GMC for serious professional misconduct. Please note that this privilege applies while actually giving evidence in Court and does not extend fully to reports, precognitions or verbal statements given outside Court.

SPEAKING TO THE PRESS

The media following a newsworthy story can be quite persistent in their attempts to gain access to information about patients. A polite refusal to comment and passing the inquiry immediately to the Hospital Press and Public Relations Officer are recommended.

WHAT'S THE RUSH?

Releasing confidential information is rarely a matter of urgency. Please take time to consider carefully whether civic duty really does outweigh the duty of confidentiality. If in doubt, talking it over with a senior colleague or your medical defence organisation often helps.

CONSENT TO TREATMENT

Doctors obtain consent from patients for two main reasons. The first is to inform the patient about what is going to happen and the second is that the doctor then knows he has the patient's authorization to proceed with the course of treatment. At the most extreme, failure to obtain consent can result in a civil action or even a charge of assault or battery.

Common sense dictates when consent is obtained and in what form. If a doctor is presented with a life threatening emergency the clinical problems should be dealt with and questions of consent to medical treatment should be considered later once the crisis has passed and the patient is in a fit state to discuss treatment options. No one can give valid consent to treatment on behalf of a patient over 18 without the authority of the Court.

Under Scots Law people over the age of 16 can consent to medical treatment. Under the age of 16 a patient has the legal capacity to consent on his own behalf to any surgical, medical or dental procedure or treatment where in the opinion of a qualified medical practitioner attending him he is capable of understanding the nature and possible consequences of the procedure or treatment. (Age of Legal Capacity (Scotland) Act 1991 Section 2(4)).

In England and Wales the law relating to the medical treatment of children is less clear. Where the child has reached the age of 16 he can give valid consent and it is not necessary to obtain the consent of a parent or guardian. Under the age of 16 if a child has sufficient understanding and intelligence to enable him or her to understand fully what is proposed he can give valid consent to treatment. If possible the consent of the parent or guardian of a patient under 16 should also be obtained.

Individual cases will vary depending on the age of the child, the urgency of the situation, the severity of the injury and the type of treatment required. It is usually prudent to ensure that the parents are involved in the decision making process and for them to approve the proposed course of action too.

RECORD KEEPING

A and E records, X ray request cards, laboratory forms, instructions to the plaster room and all the numerous pieces of paper which may be completed in connection with the patient's healthcare are classed as health records under the Access to Health Records Act 1990. The main

purpose of the Act is to allow patients access to records compiled on or after 1 November 1991. Patients also have a right to have a record amended under this Act.

It is important that notes are a description of history examination investigations diagnosis and treatment. Witty remarks cartoons and perjorative comments should not appear in patients notes. The phrase 'strange looking man' so incensed one patient that he refused to be satisfied until the full Clinical Complaints Procedure had been invoked.

If a patient complains about a remark or a description in his notes it can be difficult enough to explain it to seniors or employers. It is even more embarrassing to be questioned about your jokes and unpolite abbreviations while standing in the witness box in Court.

RETENTION OF RECORDS

Good legible contemporaneous records benefit the patients the doctors and paramedical staff. Apart from the clinical advantages another good reason for retaining records is the effect of the Limitation Acts. Patients have three years in which to raise an action. The three year period does not start from the date of the treatment operation or investigation but from the patient's date of knowledge that the disability or loss may be attributable to the incident. A defender or defendant is entitled to argue that a pursuer or plaintiff reasonably should have known that the disability or loss was attributable to the medical incident even if in fact he did not know. For children the date is the child's sixteenth birthday in Scotland and the eighteenth birthday in England and Wales.

Take for example a patient who says she has fallen on her outstretched hand. The doctor elicits maximum tenderness in the anatomical snuff box but because there is a full range of movements of the wrist elects to apply a crepe bandage and discharge the patient. Five years later her GP refers her to an orthopaedic consultant because of pain and stiffness in that wrist. An X ray shows a non union of a fracture of the scaphoid and osteoarthritis. The three years in which to raise an action begins when she realises her clinical problems are related to the medical care she received at the time of her fall.

If the records are to be taken from the department for any reason for example for use by a Home Office Pathologist after a death then a clear photocopy of all the notes should be made first.

Never be tempted to alter falsify or destroy records particularly after something has gone wrong.

WRITING REPORTS

Doctors working in Accident and Emergency departments are frequently asked to provide reports on patients in various circumstances including criminal proceedings clinical complaints negligence claims against the Hospital or civil actions against third parties. A few points should be considered before a report is prepared.

Who is asking for this report?
Has that person the right to ask?
Why have I been asked?
Has the patient's consent been obtained?
Have I collected all the information I need to prepare this report?

It is usually advisable to confine reports to matters of fact unless the doctor is sufficiently senior and experienced to offer an expert opinion on a case.

The patient's name date of birth and other details should be set out at the start of the report. The doctor's name rank qualifications and experience should appear either in the first paragraph or at the foot of the report. This may appear to be stating the obvious but it is surprising how many reports bear the name of neither the doctor nor the patient.

The report should set out the history examination and diagnosis followed by a description of the treatment and referral or discharge of the patient. It should be clear when your involvement in the patient's care ended for example when he was discharged from the department or admitted to a ward. Attention to detail at this stage should reduce the chance of your being asked for clarification or further comments later.

FURTHER READING

Professional Conduct and Discipline: Fitness to Practise. General Medical Council 1993.
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Medical Aspects of Fatigue in Drive. The Medical Commission on Accident Prevention London 1985.
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J roy nav med Serv 1995 81 61 65

Consent to treatment

M S Smith

INTRODUCTION

The legal issues of consent in the doctor patient relationship revolve around the torts of battery and negligence and the crime of battery [1] The right of adult persons of sound mind not to be given medical treatment without their consent [2 4] is a recognition of the fact that in common law a person who intentionally touches another against that others will commits a trespass to that person [3] The agreement or acquiescence to the act is termed consent [5]

Every human being of adult years and sound mind has the right to determine what shall be done with his own body and a surgeon who performs an operation without his patient s consent commits an assault for which he is liable for damages thus spoke Justice Cardozo This has been extensively used in English Courts to sum up the patient s right to the inviolability of their person and the right to self determination as regards their medical treatment In 1992 Lord Justice Donnildson approached the subject differently when he stated that the legal purpose of consent to treatment was to provide those concerned in the treatment with a defence to a criminal charge or battery or a civil claim for damages for trespass to the person [6] and his preferred legal analogy was that of the legal flak jacket which protects the doctor from claims by the litigious He emphasised consent as protecting the doctor rather than the rights of the patient Interestingly where a patient alleges he did not consent to a procedure the onus of proof does not lie with the defendent (ie medical practitioner) but with the patient who must prove he did not consent [7]

Have the courts moved towards accepting doctors opinions on the treatment of a patient in preference to the patients own wishes? To discuss this in more detail it is necessary to look at the elements of the principle declared

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THE RIGHT TO REFUSE

Consider the adult person of sound mind In *Re* T[8] it was stated that prima facie every adult had the right and capacity to decide whether he would accept medical treatment even if a refusal might risk permanent injury to his health or even lead to a premature death A bold declaration of patients rights In this case however the patients refusal to consent to the treatment deemed necessary by the doctors was vitiated on the grounds that the decision was not genuine because of the undue influence of her mother In *Re S*[9] a woman refused a caesarian section on religious grounds yet the court overrode her decision on application on the grounds that it was in the vital interests of the patient and unborn child Here we see the courts overriding the wishes of the patient when they consider it to be in the best interests of the patient It appears the best interests of the patient usually coincide with the wishes of the doctor

ADULT PERSON

What are adult persons? The Family Law Reform Act 1969 reduced the age of majority from 21 to 18 years of age however both statute and case law have sought to extend the principle of self determination with regards to consent to medical treatment to those under 18 This extension can be considered as one of the exceptions to the principle and therefore merits discussion if only to re emphasise the attitude of the judiciary towards non consent in conflict with doctor s wishes Consider those who have not reached majority The question of the rights of minors aged under 16 came to prominence in the Gillick case This originated from the question as to whether a doctor could lawfully prescribe contraceptives for girls aged under 16 without contacting their parents A DHSS guideline issued in 1980 stressed that every effort should be made to involve parents but if the girl was adamant the principle of confidentiality should be preserved and the parents must not be told [10] Mrs Gillick sought a declaration against the DHSS and her Health Authority that their advice that children under 16 could be treated

without parental consent was unlawful and wrong. She also sought a declaration against her Health Authority that medical personnel employed by them should not give advice or treatment regarding contraception or abortion to any of her children under 16 without her prior knowledge and consent. The Court decided that provided the child had the maturity and understanding to appreciate the nature of the consent given that the doctor could proceed with treatment of the basis of that alone. This was not limited to contraception it applied to all forms of medical treatment and the nearer the child was to 16 and the more minor the nature of the treatment the more likely it was that the child was capable of giving valid consent. This decision was overturned at the Court of Appeal when the issue centred on parental rights. The DHSS then appealed to the House of Lords who by a majority of 3 to 2 held that the original advice circulated by the DHSS was not unlawful. In his summing up Lord Scarman stated that the parental right yields to the child's right to make his own decision when he reaches a sufficient understanding and intelligence to be capable of making his own mind up on the matter requiring decision.

So how far has this landable principle been applied? In *Re R* a 15 year old girl in local authority care suffered a deterioration in her mental health and refused antipsychotic medication prescribed by a consultant psychiatrist. Initially it was accepted that if the child had sufficient understanding and intelligence to fully understand what was proposed and was capable of making up his own mind on the matter the parental and court's right to give or refuse consent yielded to the child's right of self determination. In this case the judge ordered the treatment to be given on the grounds that the child had not reached a sufficient level of understanding. On appeal Lord Donaldson deemed it to be an error to treat the case as deciding that a Gillick competent child had the right to refuse treatment. He stated that there can be concurrent powers to consent to treatment and that if a competent child declines to consent it can be given by someone else with parental responsibilities for the child. The failure of the Gillick competent child is a very important factor in the doctor's decision whether or not to treat but does not prevent the necessary consent being obtained from another competent source [1] [2] Thus if a competent child consents to treatment there is no problem. If they refuse the doctor can seek to override this by seeking consent from those with parental responsibilities. Again this appears to be a case of 'we recognise the rights of an individual but doctor knows best'.

For those aged between 16 and 18 Section 8 of the Family Law Reform Act 1969 provides that where a child has reached the age of 16 the consent of that child shall be as effective as if that person was of full age [3] This was the line followed by the Department of Health when it issued guidance to the Children Act 1989. In para 2.32 of the Guidance it states 'Children of 16 and over give their own consent to medical treatment this appears to be confirmed in sections 38 43 and 44 of the Act. For example in section 38(6) governing the making of an interim care order a court may give directions it considers appropriate regarding the medical assessment or treatment of the child but that if the child is of sufficient understanding to make an informed decision he/she may refuse to submit to the examination or other assessment' [4] In *Re W* (1992)[5] a case involving a 16 year old girl with anorexia nervosa the court overrode the patient's refusal to consent to medical treatment on the grounds that she was not capable of making an informed choice due to the effects of the disease itself. Lord Donaldson stated that 'Where the wishes of the minor are themselves something which the doctors reasonably consider need to be treated in the minor's own best interests those wishes have a much reduced significance. It was held that the Court could in the child's own best interests override the wishes of a child who had sufficient intelligence and understanding to make an informed decision who sought to refuse medical treatment in circumstances which would in all probability lead to the death of the child or to severe permanent injury. It went on to say that the purpose of section 8 of the 1969 Act was to enable the minor aged 16 or over to consent to medical treatment which in the absence of consent by the child or its parents would constitute a trespass to the person and the section had no application to whether the minor had an absolute right to refuse medical treatment. In effect if the minor agreed with the doctor the consent was valid but if they didn't the refusal didn't constitute a legally valid refusal of consent.

OF SOUND MIND

What is meant by 'of sound mind' in relation to consent to treatment? The Mental Health Act 1983 defines 'mental disorder' as meaning

mental illness arrested or incomplete development of mind psychopathic disorder and any other disorder or disability of the mind yet the fact that a person is suffering from a mental illness does not in itself preclude them from giving legally recognised consent Part IV of the Act recognises that a person suffering from mental illness may have the legal capacity to consent providing they have the capability of understanding Section 57(2) requires that a patient shall not be given any form of treatment to which this section applies unless he has consented to it and an appointed registered medical practitioner has certified in writing that the patient is capable of understanding the nature purpose and likely effects of the treatment and has consented to it This determining the mental capacity to consent lies in the first instance with the medical profession

Section 58 of the Act covers aspects of Electro Convulsive Therapy (ECT) It allows for the decision of a patient to refuse treatment to be overridden even where the patient understands the nature purpose and likely effects of the treatment which means that detention under the Act permits the removal of that patient's capacity to refuse treatment [13]

The courts recognise that capacity may change with time In *Re D* [2] it was decided that the capacity of an 11 year old girl with De Seras syndrome might improve therefore the application for leave to carry out a sterilisation was refused In her judgement Heilbron J stated the operation was neither medically indicated or necessary and that it would not be in D's best interests for it to be performed The medical evidence of several eminent medical practitioners was in conflict with that of her general practitioner and consultant gynaecologist Faced with differing medical opinion and the judge maintained the patients rights in particular the "basic human right of a woman to reproduce

THE RIGHT TO INFORMATION

What level of explanation should be given to a patient? It can be argued that if all the risks or side effects which are possible as the result of a medical procedure are not explained to a patient then the consent is not valid and the treating doctor is liable for battery In Chatterton v Gerson Miss Gerson pursued a claim following an intrathecal injection which resulted in numbness and muscle weakness She claimed she had not been warned that this was a potential side effect and that consequently her consent could not have been valid Her claims for battery and negligence both failed The judgement stated that once the patient is informed in broad terms of the nature of the procedure which is intended and gives her consent that consent is real Bristow J also stated that When the claim is based on negligence the plaintiff must prove not only the duty to inform but that had that duty not been broken she would not have chosen to have the operation It was settled that a doctor was required as part of his duty of care in his patient to explain what he intended to do and the implications involved in the way in which a responsible doctor in similar circumstances would have done and if there was real risk of misfortune in the procedure however well it was carried out the doctor's duty was to warn of the real risk if such misfortune

What is a real risk and what standard should be applied with regard to the disclosure of information? In Hills v Potter [4] Hirst J concluded that the standard to be applied to medical advice prior to an operation as well as to diagnosis and treatment was that laid down in the Bolam case [5] the so called Bolam Test In the Bolam case a patient agreed to electro-convulsive therapy in order to improve his depression and suffered fractures in the course of the treatment Mr Bolam had not been warned that this was possible although his doctor knew the risk and alleged that the doctor had been negligent in not informing him of the risk The claim was dismissed on the grounds that the amount of information given was in accordance with accepted medical practice in such cases The test is the standard of the ordinary skilled man exercising and professing to have that special skill What a doctor was required to tell a patient was to be determined by the medical profession's own standards rather than be driven by the rights of the patient During the 1970s the Americans were turning to the so called prudent patient test of the Canterbury doctrine [6] where a doctor must disclose any material risk inherent in a proposed line of treatment [7] A risk is thus material when a reasonable person in what the physician knows or should know to be the patient's position would be likely to attach significance to the risk or cluster of risks in deciding whether or not to forgo the proposed therapy [8]

This view was rejected by four of five Law Lords in the Sidaway case in favour of the Bolam test In Sidaway the patient had undergone spinal surgery on two occasions and following the latter had suffered a spinal cord injury that

left her severely disabled. There were two major risks with this surgery over and above the inherent risk of surgery and general anaesthesia – the risk of damage to the nerve root which was assessed as around 2% and risk of damage to the spinal cord which was assessed as being less than 1%. The latter occurred and Mrs Sidaway's lawyers claimed that the surgeon had been in breach of a duty to warn her of all possible risks inherent in the operation and argued that as a result her consent had not been valid. It was held that there had been no breach of duty as the surgeon had acted in accordance with a practice accepted as proper by a responsible body of neuro surgical opinion. Lord Bridge proclaimed that 'Respect for the patient's right of self-determination in particular therapy demands a standard set by law for physicians rather than one which physicians may or may not impose upon themselves' yet rejected the Canterbury Doctrine on the grounds that it gave insufficient weight to the doctor patient relationship: it confined the expert medical evidence to an explanation of the primary medical factors involved and the objective test propounded was 'so imprecise as to be meaningless'. It was held that 'The test of liability in respect of a doctor's duty to warn his patient of risks inherent in treatment was that the doctor was required to act in accordance with a practice accepted at the time as proper by a responsible body of medical opinion'. Accordingly English Law did not recognise the doctrine of informed consent. Lord Templeman stated that the doctor had duty to give the patient such information as was necessary for them to make a balanced judgement but that this was subject to his overriding duty to have regard for the best interests of the patient and accordingly it was for the doctor to decide what information should be given to the patient. Only Lord Scarman dissented advocating the 'prudent person test' – the doctor should be liable where the risk is such that in the court's view a prudent person in the patient's situation would have regarded it as significant. Their Lordships did however state that this judgement 'should not be seen as a total endorsement of the view that providing a doctor follows current medical practice in deciding on the advice to give his patients he will be immune from legal attack'.[5]

A BMJ article examining patient anxiety when given general consent compared with informed consent concluded that in that study giving detailed information did not significantly increase patient anxiety and reduced the potential for subsequent litigation. It appears the medical profession may be moving their own professional standards towards that of the 'prudent patient'.

Do patients have a right to have their questions answered? In Blyth v Bloomsbury Health Authority Mrs Blyth sued for negligence as she had suffered prolonged menstrual after an injection of Depo Provera and that although she had asked for comprehensive information on the potential side effects she had not been told that it was a potential risk with this therapy. The trial judge found for her but this was reversed on appeal. As with Chatterton and Sidaway the Bolam test was supported and the degree of disclosure was that of good professional practice as determined by the medical profession's own standards.

In Gold v Haringey Health Authority the professional standard was upheld once more. Mrs Gold conceived after having been sterilised. She was not warned that the sterilisation might reverse naturally nor was she informed that male vasectomy carries a lower risk of reversal. She sued for negligence and the trial judge found for her arguing that Sidaway applied to therapeutic treatment only – that this was a non therapeutic procedure and that the test that should be applied was that of the 'prudent patient'. This was reversed by the Court of Appeal who stated that Bolam test applied as it was an exercise of professional skill and therefore could be no distinction between therapeutic and non therapeutic treatment. As Margaret Brazier so sneerily puts it: 'In Gold the patients right to decide for herself on treatment seems almost to disappear from the picture'.[6]

What happens when a Court believes that the medical treatment is inappropriate? Can a court order a medical procedure to be carried out? In three separate judgements Lord Donaldson says no.[7] In *Re R* he states 'No doctor can be required to treat a child whether by the court in the exercise of its wardship jurisdiction or by the parents or by the child or by anyone else' and that the decision to treat is a professional one. In *Re J* he states that those responsible for consent can refuse treatment A or B or both but cannot insist on treatment C. He also states 'No-one can dictate the treatment to be given to the child neither court parents nor doctors' and that there are 'checks and balances'. In *Re J*[8] he held that to order a medical practitioner to treat a patient in manner against his clinical judgement would 'require him to act contrary to the fundamental duty he owed his patient' and the

[illegible] to exercise its [illegible] jurisdiction by [illegible] such an order.

Thus while the courts continue to proclaim the rights of the individual in general they appear to side with the doctors when considering what treatment a patient should have.

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History

The Royal Naval Medical Branch Ratings and Sick Berth Staff Association

J Fitch

PORT DIVISIONS SICK BERTH STAFF ASSOCIATIONS

When Fleet Surgeon Neil Robertson of stretcher fame was discharged sick to RNH Plymouth from HMS *Blake* the destroyer Depot Ship Scapa Flow in early 1916 he was relieved by Fleet Surgeon later Surgeon Commander M H Knapp He very soon became interested in the welfare of the officers of the Grand Fleet stationed there and with the help of a lady living where he organised an officers clubhouse where officers could relax in a homely atmosphere and obtain meals at reasonable cost

On returning from the Royal Navy in the rank of Surgeon Captain after the cessation of hostilities he continued his interest in the welfare of medical staff in particular that of the Sick Berth Staff At his own expense and of his own initiative he visited Naval ports and depots at home and abroad and as a result of his endeavours the Admiralty gave its blessing with the backing of the MDG to the formation of Port Divisions Sick Berth Staff Associations for serving ratings The annual subscription was half a crown (12½ pence) and the cash was invested in order to produce a sum of £20 for ratings invalided from the Service and £10 as a death benefit

An annual Port Directory was distributed to members In this were listed all serving members of the Sick Berth Staff by seniority dates of passing examinations for promotion to SBA LSBA SBPO and date of pension for SBCPO — making it possible for a newly joined probationer to work out his approximate dates for promotion to SBA 145 weeks training exceptionally 35 weeks) LSBA (usually about eight years service in possession of two good conduct badges) SBPO (about 15 years service with LSGC Medal) and SBCPO a few years before pension was due[1]

When I joined in October 1933 there was an employment representative in each Division and details of civilian employment available especially in nursing and allied skills Surgeon Captain Knapp was also very active in endeavouring to obtain official recognition for Service qualifications held by Sick Berth staff He was responsible for agitation on the History Sheet of Continuous Service ratings on discharge after 1956 of Qualified to use the name or title of Service Trained Male Nurse When the State Enrolled Assistant Nurse grade was introduced by the General Nursing Council he succeeded in obtaining recognition as such for all such personnel and made every endeavour without success to persuade the Council to recognise LSBA qualification as granting State Registered Nurse without further examination This was turned down on the grounds of a shorter period of training probationer nurses doing three years before examination

A Sick Berth Staff Association Council met annually in MDG's department under the presidency of Surgeon Captain Knapp and on his decease he was followed by Surgeon Commander J F Heggie RNVR who continued as President until the Council was dissolved in 1961 Commander Heggie died in November 1990 The Divisional Associations were well patronised by serving sickbaymen who had reason to be grateful to Surgeon Captain Knapp for his initiative and drive on their behalf The Association disappeared with the contraction of the RN and the cessation of Port Divisions

THE RN SICK BERTH STAFF RETIRED MEMBERS ASSOCIATION

The RN Sick Berth Staff Retired Members Association was organised by pensioner Chiefs in 1936 Tommy Time from Devonport Bince Canning Brigham Young Freddy Webb Charlie Pope from Chatham who won the DSM on HMS *Exeter* in 1939 after being called back

Mr Fitch is the Life President of the RN Medical Branch Ratings and Sick Berth Staff Association

her Service. The Association was dormant during the war years but as a result of pensioners being called up and a number of hostilities only ratings joining the numbers increased and in 1950 the Retired Members Association numbered 750 and had its own Directory. The sole function was an annual dinner dance held in a London Hotel and reasonably well supported.

By 1981 the years and inflation had taken its toll and the AGM attracted an attendance of only 15 — eight of whom were committee. This brought about the demise of the Association and the funds in hand some £300 were donated to Pembroke House, the RNBT Home for ex RN men in Gillingham, Kent, while the shield was presented to the Senior Rates Mess at RNH Haslar. The serving MDG had been president throughout.

THE MEDICAL BRANCH RATINGS AND SICK BERTH STAFF ASSOCIATION

A lot of work was put in at RNH Haslar and Plymouth in 1981 to make the Centenary celebrations of the Sick Berth Branch a success and a Centenary Dinner was held in RNH Plymouth in 1984. This brought together a number of ex Sick Berth staff. With the blessing of the Medical Director General (Naval) I decided to try and resuscitate the Association. I contacted the Mess Presidents of the Senior Rates Messes in Haslar and Plymouth who kindly offered the messes as a venue, publicised the forthcoming meetings in the local rags and held meetings. The Association got off the ground in Haslar with 36 Founder members attending.

Only eight appeared at the corresponding meeting in Plymouth and no regional branch resulted but an unofficial monthly meeting of Stonehouse Old Boys resulted so the effort was not entirely wasted. Membership now stands at some 250 and thanks to the hard work put in by our Secretary, Harry Mitchell, we have a journal *Lobloth* which is published and circulated three times a year.

For my sins I was elected Life President which I look upon as a signal honour. Serving MDGs have given every encouragement and act as Patron. The Presidents and members of the Senior Rates Mess have been most hospitable and have spared no effort to help the Association which includes serving and ex members of the Royal Navy. Ably supported by an excellent hard working committee we have held an annual dinner in the Senior Rates Mess for the past seven years. This is always booked to capacity with members appearing from as far afield as York, Bristol and Newcastle. We also have an annual get together after the AGM in September.

The Association has also been active in other fields. With John Stone's help I have finished cataloguing Medical Officers' Journals for World War I and we are about to start on 1919 to 1939. The Association has donated £1500 to Guide Dogs for the Blind and has collected £300 towards the Saharawan Trust run by the Earl of Nottingham and Winchelsea, a member who served in the Sick Berth Staff as a National Serviceman. Thanks to the endeavour of the Chairman, Peter Lyles, Sir Godfrey Milton Thompson when Medical Director General, was instrumental in arranging the move of the WW2 memorial to fallen Sick Berth Staff from the Junior Rates car park to a more dignified site on the front lawn of the hospital. Approaches have been made to MDG to ensure that all items of historical interest are transferred from Plymouth on closure to Haslar. I have succeeded in tracing a plaque to SBA Baker killed in HMS *Amethyst* in 1948 in the barracks church at Prince of Wales Barracks, Hong Kong ex HMS *Tamar* in the hope that it will be shipped to Haslar before the Chinese take over.

Thus although our main aim is to meet together in comradeship and to swing the lamp I feel that we also serve a useful purpose in perpetuating the traditions and ideas of the Sick Berth Staff and Medical Branch Ratings. With the help of Commander Derek Stone, Head of the Medical Services Branch, the New Entries accommodation has been named Albert Block and each of the four corridors after one of the four posthumous Albert Medals awarded to the Staff during the Second World War. We also intend to present an annual prize for the best marks in a Male PMA on passing out of the School thus maintaining contact with the Branch of today which remains in good hands and upholds the ideals and traditions of those who have gone before.

On Remembrance Sunday parties attend St Luke's Church, Haslar and the Cenotaph in Whitehall and wreaths are laid. After the service the Haslar wreath is transferred to the SBS Memorial on the front lawn.

With a further reduction in numbers and with RNH Haslar about to become a tri service hospital it is to be hoped that the Association will be able to continue its meetings and Annual Dinners in Haslar and that the Association will increasingly become a focal point for all serving

and ex medical branch ratings Our Secretary Harry Mitchell can be reached at the following address

Flat 10 South Beach House
3 Florence Road
Southsea
Hants PO5 2ND

and he would welcome items of interest and reminiscences from members of the Royal Naval Medical Service

It is also hoped that a publisher can be found for Honours and Awards to RN Medical Officers 1910-1991 which I have researched and possibly an updated reprint of *Doc 100 year history of the Sick Berth Branch* by Gregory Clark originally published by HMSO in 1984

Book Reviews

Stress Survival Guide Carol Grainger BMJ Publishing Group September 1994 Pp 64 UK £6 95 Overseas £8 00

The bookshelves and libraries of the developed world have numerous publications on the subject of stress and it is a common subject for discussion in all sections of the media It is always said that the medical profession has an elevated level of stress and numerous surrogate markers for stress (divorce alcoholism suicide) are highly prevalent among doctors This is the first book that I am aware of which is written by a doctor specifically for doctors about dealing with stress Its target audience is principally junior doctors (especially pre-registration house officers) and medical students but many of their more senior colleagues would benefit from borrowing this little book The author was a house doctor in 1988 and writes with the feeling and authority of recent experience

Probably the most important message in the introduction is where the author makes the point that individuals suffering from stress are neither alone nor blameable She describes the symptoms of stress and gives guidance on how to recognise stress in ones self or others and although one has heard most of the features discussed previously it is useful to have them drawn together

The author then goes on to describe more specific techniques for reducing stress levels and although many of the descriptions are somewhat superficial they do give useful pointers of where to go next I found her sections on assertiveness and time management extremely interesting She concludes on a message of hope and then gives many sources of further advice and help Appropriately this book was distributed free of charge to house officers working in the West Midlands and I think they were lucky to get it It should certainly be required reading for all newly qualified house staff Many of the stressful situations described would certainly apply to a new entry medical officer about to take up his first sea appointment — they should all read it

A R O Miller

ABC of Antenatal Care Second Edition G Chamberlain BMJ Publishing, Group November 1994 Pp 85 UK £12 95

This book is a rewrite of articles which originally appeared in the *British Medical Journal* in 1990 It is written for general practitioners but is highly relevant to midwives and GP trainees The chapters are short and well written making it an ideal reference book in the surgery and as preparation for the MRCGP examination There is a good index and cross reference section although each chapter comprehensively covers a relevant topic The illustrations are clear and the tables well presented although statistics more recent than 1990 would be useful It does contain reference to the infamous case of Mr Malcolm Pearce's relocation of an ectopic pregnancy into the uterus

The chapters of Organisation of Antenatal Care Work in Pregnancy and checking foetal well being are very pertinent to the busy GP and useful for GP trainees taking the MRCGP examination The illustrations in them will be invaluable in distilling patient's anxieties

This is a well written slim volume and at £12 95 reasonably priced to deserve a place on every GP's and midwife's bookshelf

B P Lambert
Associate Adviser in General Practice
RNH Haslar

Professional and Managerial Aspects of Clinical Audit Ed Anthony Hopkins Royal College of Physicians London July 1994 Distributed by Gazelle Book Services Lancaster Pp 148 £14 00

This slim volume records the proceedings of a conference on clinical audit held in 1993 It is a useful summary of the audit activities being pursued across the spectrum of specialties at that time although of course the subject has moved forward considerably in the intervening 18 months

The quality of individual contributions varies though there are some extremely useful insights into both the practicalities of clinical audit and the political issues surrounding the subject As a primer in the subject of audit this book provides a useful description of the wide range of audit activities which have been pursued in the UK Other sources will be sought by the interested reader who wishes to know details of the audit process or who needs information on current projects

R J Clark
Consultant Physician and Postgraduate Clinical Tutor RNH Haslar

AIDS/HIV Infection Nursing Guidelines. 2nd Edition Royal College of Nursing July 1994 Sutton Projects Harrow Distributed by Gazelle Book Services Lancaster Pp 61 £6 99

This latest edition of guidelines issued by the Royal College of Nursing has been written under the auspices of the RCN HIV Nursing Society to inform nursing practice when encountering or caring for patients with HIV or related disease The guidelines begin with a short overview of the natural history of HIV infection and addresses issues of counselling and screening of patients who may harbour the virus This section is succinct factual and eminently readable for the busy nurse working in any specialty The discussion of personal attitudes when caring for HIV/AIDS patients may cause nurses to review their own belief system The need for education and support for staff is examined particularly in relation to Occupational Health However the suggested policy statement for use by hospitals conflicts in some areas with the current Service position Death and dying from HIV associated disease or AIDS is discussed in a practical manner

The greatest strength of this book is its application of current knowledge to provide guidance for nursing practice in most of the main specialties This is a practical readable book which nurses will be able to dip into at any time With the increasing incidence of HIV infection and AIDS this book should be mandatory reading for all nurses

R T Griffin
Infection Control Nursing Officer RNH Haslar

ABC of Eyes Second edition P T Khaw and A R Elkington BMJ Publishing Group November 1994 Pp 60 UK £13 95

Khaw and Elkington's *ABC of Eyes* published by the BMJ remains an excellent introduction to Ophthalmology in its second edition

Busy general practitioners will find it a useful reference source and it should also be available to medical students and nurses

The second edition has been thoroughly revised and updated The many excellent colour illustrations have been enlarged and improved There is a new section on refractive surgery adding information on excimer laser photorefractive keratectomy to that on incisional radial keratectomy provided in the first edition The cataract chapter has been expanded to include small incision surgery and phacoemulsification although it is a shame not to have also mentioned the possibility of folding intraocular lenses allowing insertion through the small (3mm) incision Advantage of the second edition could also have been taken to update the anterior chamber intraocular lens illustration The type of lens shown is no longer in common usage The information on management of visual loss has been expanded Additional contact addresses for support services and publications for the visually impaired makes a welcome practical guide for those advising patients

Overall this remains a first rate publication The clear symptom led discussion of eye disorders will be appreciated by those working in a GP surgery accident and emergency department or outpatients

Susan Hagan
Acting Surgeon Commander Ophthalmology Dept RNH Haslar

Doctors, Dilemmas, Decisions Ben Essex BMJ Publishing Group November 1994 Pp 301 UK £22 95

Dr Ben Essex a respected general practitioner and trainer has drawn on information gathered from recording and analysing thousands of cases in general practice over many years to gain an

appreciation of [illegible] decision making, can be improved. In the [illegible] he shares his thoughts and his [illegible] that decision making skills can be improved by using a set of brief guideline statements to [illegible] which once learned become an integral part of the decision maker's conceptual framework.

He writes in a well ordered thought provoking and absorbing style. The infancy of the study of decision making is emphasised and the reader is encouraged to question the views expressed. In the initial chapters he describes his views on decision making and the importance of providing adequate training in it. Boxed lists and flow diagrams are used to great advantage to present key points. These range through topics such as the importance of defining the decisions required, framing the questions precisely and without bias, determining who should be involved in the decision making process, the factors to be considered and how information on these should be gathered and its relative importance determined. It is easy to dismiss such topics as being common sense or intuitive until one reads through the lists and recognises aspects of problems which one may well have overlooked if asked to conduct such a study.

Dr Essex moves on quickly to consider various types of decisions and some of the factors affecting them. He uses case histories to develop the set of rules which if applied will increase the chance of decisions being safe, ethical, cost effective and acceptable. Here he adopts a tutorial like conversational style repeatedly posing questions and, as few staff answers are given, then leaving the reader with the dilemma.

Although Dr Essex's book is directed primarily at medical students, general practice trainees and their trainers, I commend it to all doctors and other health care professionals in clinical and administrative practice. Few will fail to benefit from reading the initial chapters and at least dipping into the rest of this book from time to time to re-examine, refresh and increase their confidence in their decision making processes. I dare say most would enjoy the experience.

G H G McMillan
Surgeon Captain
Dean of Naval Medicine

Management of Stable Angina Eds David de Bono and Anthony Hopkins. Royal College of Physicians of London. July 1994. Distributed by Gazelle Book Services, Lancaster. Pp 156. £11.60.

This small publication is the edited synthesis of working papers presented to a workshop organised by the Joint Audit Committee of the British Cardiac Society and the Royal College of Physicians of London to advise on standards and audit in relation to the care of patients presenting with angina. The editors in their introduction state their belief that the book will be useful to both purchasers and providers of cardiac care. For the uninitiated it provides a useful overview but for the practising physician with an interest in cardiology or the specialist cardiologist there should be nothing new. However, each chapter is well referenced and links well with the whole.

A brief review of the pathophysiology of ischaemic heart disease is followed by a discussion of the difficulties encountered in estimating the incidence, prevalence and natural history of angina. Two chapters covering investigation put exercise testing and coronary angiography in their proper context and four useful algorithms are provided. The discussion of myocardial perfusion imaging, which emphasises its value in prognostic and functional assessment but understates the difficulties and variability in its interpretation, should probably have followed instead of being placed between the chapters which address the roles and relationships of the district general hospital and the specialist cardiac centre. The good summary of the issues provided by the concluding chapter is preceded by two uninspiring papers discussing audit and minimum data sets.

This book to be read in a single evening should remain on the bookshelf as a source of useful references to key papers which have shaped the way in which we have provided or should provide care for angina patients.

M L Cowley
Consultant Physician and Cardiologist
RNH Plymouth

Practice Parameters in Medicine Paul D Chan. Current Clinical Strategies (USA). August 1994. Distributed by Gazelle Book Services, Lancaster. Pp 281. £11.50.

Practice Parameters in Medicine is an American book which aims to present a concise overview of therapeutic guidelines for managing common medical problems. A small 281 page paperback it could easily be fitted in a coat pocket. It is divided into chapters for the main

medical systems and within each chapter a few pages are devoted to a specific condition The problems covered are wide ranging from myocardial infarction and asthma through to acne psoriasis male impotence and hypomagnesaemia Despite this apparent wide spectrum it is not comprehensive in its coverage and subjects appear to have been picked at random and then only partially covered The respiratory (or pulmonology) section of the book covers the treatment of allergic rhinitis and asthma as well as advice on how to stop smoking The emergency treatment of asthma merits six lines mentioning regular B2 agonist nebulisers monitoring peak flow and if no improvement in one hour administer an intravenous corticosteroid What about oxygen? What about specific signs and symptoms?

The book misses out some emergency situations (treatment of diabetic ketoacidosis) and is confusing as it uses American terminology and there are differences in some of the treatments The algorithm for treating asystole mentions Atropine but instructs it to be given as a dose of one mg IV which may be repeated every three to five minutes whereas the current European Resuscitation Council Guidelines are for Atropine to be given as a 3mg dose IV once only The algorithm is more difficult to follow and is not as obvious as that contained in the BNF

The author admits that the book is written in a highly condensed format and does not describe all potential therapeutic considerations nor does it provide a complete description of procedures and their risks A caveat in the preface mentions that physicians using the book are expected to have extensive training and to obtain consultation from appropriate specialists as needed

This is all very well but who is the book aimed at? It is too concise for the pre clinical House Officer needing a concise pocket book on the management of the problems he is likely to see from day to day both on his routine ward work and as emergencies The General Practitioner and hospital physician would occasionally dip into it but would become frustrated with the brevity of the information and would turn to a more substantial text book

For the £11 50 it costs the physician would be better to buy a British National Formulary if he is not already given it free Otherwise buy the *Oxford Handbook of Clinical Medicine* or *Clinical Specialties* (or indeed both) which cover much more in much greater depth in a more readable context All you need is a bigger pocket in your white coat

M M Parrish
HMS Neptune

Guidelines on Testing for Drugs of Abuse in the Workplace Faculty of Occupational Medicine Royal College of Physicians May 1994 Pp 28 £10 00

The introduction states This report has been prepared primarily to give guidance to occupational physicians whose company has made the decision in principle to initiate a drug testing programme It excludes alcohol nicotine solvents and (thankfully) caffeine and makes no claim to answer all the questions that may be posed

In a series of clearly laid out sections it considers purpose(s) of a drug testing programme the legal background civil and criminal liability of the employer how to plan establish and implement a programme and then maintain and review it Appendices include details of recommended drug testing procedures and a bibliography

The Royal Navy has been moving towards a drug testing programme and there has been prolonged debate on directed (for cause) or random (unannounced) tests Armed with this report Staff Medical Officers in conjunction with their legal advisors should be able to influence policy making rationally and prevent further fiascos at Industrial Tribunals

With the shadow of DS15 over the medical branch I would recommend this report to all occupational physicians

Until a formal drug testing programme is introduced in the Royal Navy establishment medical officers may find that their ethical and legal dilemmas caused by the Royal Navy being both employer and court of law are better covered in BR 1991 for directed (for-cause) problem cases

N F Baldock
Surgeon Captain FONA

Hunter's Diseases of Occupations Eighth Edition Eds P A B Raffle P H Adams P J Baxter and W R Lee Edward Arnold February 1994 Pp 804 £145

This edition targets hospital clinicians and occupational physicians as a text on the clinical aspects of occupational disease Does it succeed? The 35 chapters have 48 contributors but

editorial control has ensnared a good read throughout with the occasional flash of humour — old fashioned barometers (and American aviators) are often calibrated in inches of mercury. The references are comprehensive and up to date. The first section deals with the occupational history and then gives a useful account of governmental and legal issues and epidemiology. Section 2 is a masterly account of diseases associated with chemical agents. Section 3 diseases associated with physical agents succinctly covers areas particularly relevant to naval practice (sound, vibration, thermal hypo and hyperbaric, ionising and non ionising and EMF) and the chapters on dusts and occupational lung disorders are outstanding. Further sections consider muscular and skeletal problems, microbiological agents, mental ill-health, occupational cancer, skin disease and reproduction at work.

A measure of this book's success is the number of times it went walking from my office it should be in every OH centre as it has great appeal to OH staff and health and safety practitioners. I commend it to my hospital colleagues as both an authoritative text and a tome in which to dip and browse.

N E Baldock
Surgeon Captain, QHNA

Law and Professional Conduct in Nursing, 2nd Edition Ed. Ann F. Young. Scutari Press, London. January 1994. Pp.200. Distributed by Gazelle Books Ltd, Lancaster. £15.99.

Law and Professional Conduct in Nursing, first published in 1991, is published in response to the far reaching effects of the changes to the NHS and Community Care Act 1990. It knits together important recent legislation and a wealth of new case law, which has begun to address some of the most difficult problems relating to patient's rights, with the new edition of the UKCC Code of Professional Conduct.

The book (200 pages) consists of twelve chapters. Each of the sixteen clauses of the UKCC Code of Professional Conduct are examined and the legal and professional arguments compared and contrasted with ample use of realistic and practical examples.

The author enclines by suggesting that the onus is on individual nurses to become more politically aware and better organised if they are to be successful in influencing the law particularly regarding the profession and the recipients of care, the patients.

This is a very useful book which is recommended for nurses of any discipline who wish to gain a working knowledge of the legal implications of their professional code and its application to everyday care.

The author, Ann Young, is a lecturer and Deputy Registrar, Nightingale and Gny's College of Health, London.

Alan Dobson
Senior Nursing Officer
RNMSS

A History of Dentistry in the Royal Navy 1905 1964 N G Daws and J V Holland. Royal Society of Medicine Press Ltd. January 1995. £8.50.

This fascinating small book was published in January 1995 to coincide with the celebration of the 75th Anniversary of the establishment of the Dental branch of the Royal Navy.

A flick through its pages will reveal that although the Branch was established by Admiralty Order in Council on 22nd January 1920, our history predates this by some 50 years. It really started in 1870 when Fleet Surgeon Christopher Harvey, serving in that same HMS *Warrior* which now adorns the anchorage off Portsmouth Hard, became aware of the appalling state of the sailors' dental health and was constrained to write a paper for MDG's attention entitled 'Blue Jackets' Teeth'.

The book describes the slowly developing awareness of the requirement for professional dental care for sailors which followed Harvey's treatise until the baton was picked up by Edward Fletcher Fletcher who joined initially as a civilian dentist at RNB Plymouth was to pursue his career through the First World War and although he (and others) were denied a uniformed commission until after the War upon establishment of the Branch he was appointed to MGD(N)'s staff with the remit to organise the new Dental Service. He was to remain in this appointment for the next 26 years!

Fighting the cause for better dental health within the Service and cultivating the growth of the infant Branch from a handful of dental officers in 1920 to about 800 by the end of World War Two, he retired in the rank of Surgeon Rear Admiral (D) in 1946. He is now recognised and revered as the father of the RN Dental Services.

The book, which is a tribute to Nick Daws, scholarly research and John Hull and's ability to produce an eminently enjoyable read, finishes in the mid 1960s, the hey day of the post war

Far East Fleet it is understood that data is already being collected for Volume Two [All contributions of material anecdotes and/or photographs to the address below please!]

Copies of the History are available from Surgeon Captain (D) John Holland Department of Oral & Maxillo-facial Surgery RNH Haslar Gosport Hants PO12 2AA Price £8 50 including p&p

E J Grant
Surgeon Commodore (D)
DNDS

Obituaries

Surgeon Vice Admiral Sir Derek Duncombe Steele-Perkins KCB KCVO died 9 December 1994 at the age of 86

Surgeon Vice Admiral Sir Dick Caldwell writes

It is a sad but now inevitably more and more frequent occurrence to learn of the death of long standing friends and colleagues

I have known Derek and enjoyed his friendship for over sixty years We were at Edinburgh together as medical students and I can still recall with admiration his prowess at boxing and seeing him win the Heavyweight title in the University championships He gained a double Blue at the University for that and for his rugby as well and went on to get capped by Devon and the Royal Navy An impressive record I saw in cuttag from a local sports paper with yet another feather in his cap when he was just 18 I quote D Steele Perkins 18 years of age of excellent build and possessing remarkable strength and aptitude for the game (all in wrestling) should become a noted wrestler with proper training However despite this glittering invitation Derek fortunately chose a medical career To round off his athletic acquvities in the West he also went in for motor cycle rough racing where he was successful enough to become known as Dare Devil Derek

His backgrounnd in the West Country was medical — both his father and grandfather being doctors as was his brother Jan at one time a Surgeon Commander and yet another relative Tony now a Surgeon Captain at Portsmouth

It was in 1932 that Derek joined the Navy and was abroad at sea for nearly four years This was followed by a spell at HMS *Ganges* for two years and then to the training cruiser HMS *Vindictive* During his time at Shuiley he married Joan Boddan in 1937 and they embarked on an extremely happy 48 years together In the later years she had a troublesome chest complaint but despite this she always appeared cheerful and optimistic Sadly she died in 1985 Derek being left with three daughters

Back to 1939/40 and as war broke out he was posted to Chatham Naval Hospital to join a surgical team dealing with war and civilian casualties In 1944 he went to Australia to become involved in the war In the Pacific During this period he became a Fellow of the Royal Australian College of Surgeons

In 1946 on his return from the Far East he was appointed to RN Hospital Malta and shortly after this he received the exciting prospect of appointment to the SS *Gothic* for the Royal Family's tour to the Indian Ocean and Africa — the trip that terminated in Kenya with news of the death of King George VI A return to Chatham RN Hospital was the next appointment but by now Derek a Surgeon Captain was so to speak on the staff of the Royal Family and accompanied the Queen on all her tours and visits including the six month Commonwealth trip again in SS *Gothic* This was a fascinating experience which embraced Australia New Zealand Fiji Tonga and Ceylon A few years later he was again in attendance for Her Majesty's visit to India and Canada

The late fifties and early sixties were a very rewarding and fruitful period for Derek He had been appointed a CVO by the Queen following the earlier award of QHS in 1961 and several other decorations had been awarded to him by several countries the Royal tours had visited Promotion to Flag rank and appointment as MOiC RNH Haslar followed and finally in 1963 he became Medical Director General He also became a CB in 1963 and was further honoured with a KCVO (1964) and KCB (1966)

The political problems for our Medical Branch despite its strongly improving stature and reputation during and since the war were now a constant niggle and we all undoubtedly benefited from Derek's guidance and quiet leadership It's sad these days to see and hear of so many cuts and closures but with MOD and the Government under so much economic and other pressures it is regrettable but presumably inevitable

Derek retired to Lymington in 1966 and was able to indulge in two of his great loves sailing

and fly fishing. He became Commodore of the Royal Lymington Yacht Club a post he relished and he also played a prominent part in the committees of the NHS and of the Red Cross and the RNLI (did I say he had retired?)

I am grateful to his daughter Derry and to an ex RAF sailing chum of his Frank Sarson for a memory or two and some old cuttings about Derek Sarson and his wife and Derek sailed a 40 foot boat across the Atlantic from Antigua via Bermuda and the Azores home to Lymington. The trip took two weeks and I hear it was sheer bliss. Derek at that time was 70.

To sum up his whole life was full of incidents successful and exciting. He was a big man in every sense yet gentle considerate and modest to a degree and with it all — importantly — a good doctor.

We will miss Steely P. To his family our condolences — and our congratulations. They must be very proud of him.

Surgeon Captain James Valentine Williams Royal Navy died 28 November 1994 at the age of 95.

Surgeon Captain J V Williams RN qualified MB ChB from Trinity College Dublin in 1923 and entered the Royal Navy as a Surgeon Lieutenant for Short Service 26 April 1924 having spent some time as a Surgeon Probationer RNVR in 1918. He transferred to the Permanent List in 1926 and was promoted Surgeon Lieutenant Commander 26 April 1930 and Surgeon Commander on 26 April 1936.

On 5 December 1936 he was appointed to the RN Hospital Haslar as Specialist in Anaesthetics and served at this Hospital until April 1939 when he was appointed to HMS *Ark Royal*. His next appointment was in the RN Auxiliary Hospital Kilmacolm as Specialist in Anaesthetics from January 1942 to February 1944 and then after eight months at the Central Air Medical Board Lee on Solent he went to the RN Air Station Donibristle as Specialist in Air Medicine and for duty on the staff of RANAS (North). He was granted the acting rank of Surgeon Captain whilst holding this appointment until his promotion to the confirmed rank of Surgeon Captain on 30 June 1945.

After short periods at RN Auxiliary Hospital Barrow Gurney and RN Hospital Haslar in December 1945 and January 1946 Surgeon Captain Williams was next appointed in February 1946 to HMS *Highflyer* as Fleet Medical Officer and as Specialist in Hygiene. On return to the United Kingdom a year later he spent two years as Principal Medical Officer RN Barracks Chatham before returning to HMS *Raleigh* in September 1951 for a further three years. In November 1954 he was appointed as Principal Medical Officer RN Barracks Devonport his last appointment on the Active List. In June 1955 he was appointed Queen's Honorary Physician.

Surgeon Captain Williams retired from the Royal Navy on 13 March 1956 having served for more than 31 years.

Surgeon Captain Joel Glass OBE Royal Navy died at his home in Australia on 1 January 1995 at the age of 81.

Joel Glass who died in Australia where he spent most of his retirement was born in Brooklyn New York in April 1913 and educated at New York University (Bachelor of Arts) then Anderson's College of Medicine in Glasgow. In January 1941 he gained the Scottish triple. He sought to enter the Royal Naval Volunteer Reserve and was commissioned Surgeon Lieutenant in April 1941.

He served in HMS *Blencathra Fortitude Enterprise* then *Victory* before being promoted Acting Surgeon Lieutenant Commander in 1946. He was transferred to the Permanent List of the Royal Navy in August 1947 shortly after becoming a naturalised British subject. Promoted Surgeon Lieutenant Commander in 1949 he served in HMS *Gambia* in the Mediterranean until 1952 when he was appointed to the Dockyard at Sheerness in the acting higher rank of Surgeon Commander. During that appointment he did excellent work in the floods of the winter of 1953.

He was confirmed in the rank in 1955 when he returned to Scotland as Senior Medical Officer HMS *Condor* and Staff Medical Officer to Rear Admiral Reserve Aircraft. In 1957 by this time a Diplomate in Public Health he went to HMS *Terror* as SMO of HM Dockyard Singapore and Naval Medical Officer of Health and Staff Medical Officer to the Flag Officer Malayan Area. He was commended for his interest in the welfare of the Asian community and public health assistance rendered to the Singapore Government.

In 1959 he went to Northern Ireland as Staff Medical Officer. Whilst there was awarded the Gilbert Blane Medal for 1959 and was appointed OBE in the New Year Honours 1960. In 1961 he joined HMS *Cochrane* to serve as Naval Medical Officer of Health and Staff Medical Officer to the Flag Officer Scotland. In 1963 he moved to the Medical Department of the

Admiralty as Assistant Director General (Research) and Senior Specialist in Hygiene and in 1964 was promoted Surgeon Captain. He remained in that appointment until he was placed on the Retired List in February 1971. He excelled in the headquarters where his deep knowledge of research and scientific matters and ability to summarise and explain complex matters to others not of a scientific bent proved to be particularly valuable. He was much respected in the academic circles in which his duties took him.

Joel Gloss was a quiet and reserved officer with a charming manner and keen sense of humour. During his Service career he had a wide range of interests away from his work, a clever twist with water colours and oils, butterfly collecting in Singapore and an accomplished fencer with the epee. He developed an interest in naval history as exemplified by an erudite biographical appreciation of Dr James Lind. A very kindly yet firm father figure and loyal friend he was much liked and respected by his wide circle of civilian and Service contacts, the sort to whom one would go instinctively if in trouble. He always seemed to thrive on hard work and would turn his hand to anything. He had an extensive knowledge of English vocabulary and indeed it was said that if he had a fault it was to use six long words where others might be satisfied with a single short one.

Surgeon Commander (D) Keith Ronald Needham Royal Navy died at home on 13 October 1994 at the age of 66

Surgeon Rear Admiral (D) A E Codham CB writes

Keith Ronald Needham was born in Rotherham, Yorkshire on 9 May 1928. His father was a Director/Manager of a steel company in reasonable circumstances. Keith attended Rotherham Grammar School and later King Edward VII School when the family moved to Sheffield. On leaving school he studied Dentistry at Sheffield University, qualifying in September 1950. So he was a true Yorkshireman — and indeed a bluff Yorkshire character whose sense of humour often showed!

After a six months house appointment he applied to join the Royal Navy, was accepted and joined Haslar in April 1951. Within a year he was appointed to HMS *Terror* in Singapore where he spent three years. In 1956/57 he did a short stint in Malta in HMS *Forth*, and served further sea time in the aircraft carrier HMS *Victorious* from August 1967 until the ship was paid off as a result of a political decision the following year. Most of the remainder of his service was in various Training Establishments including *Raleigh, Fisgard, Caledonia, Sultan* and *Collingwood*.

Wherever he went he took full part in all activities, sporting and social, and was held in high esteem by all — including his patients — and you can't pay better tribute than that!

As a student he was a keen sportsman and played hockey for Sheffield University 1st Team. He was a very strong and powerful man. Later he took up sailing, owning his own yacht for many years and at one time, whilst SDS there, serving as chairman of HMS *Collingwood* Sailing and Cruising Club.

He was promoted Surgeon Commander (D) in December 1963 and retired at his own request from the Royal Navy in 1979. For some years after leaving the Service he undertook children's dentistry in local schools — he had a great and natural rapport with children and they genuinely liked him and his kind manner.

He married his wife Mercedes in the 1950s and they had four children — Simon the eldest is in the Royal Marines and another son is serving in the Royal Air Force. Sadly their marriage ended in divorce a few years ago — but the family stuck closely together despite this.

Keith was a practising Christian and a regular churchman. He loved church music and singing in the choirs of his church, St Mary's Alverstoke, Christ Church, Gosport and many others. He had an excellent voice.

He had set his heart on living in Cornwall — to sail and live the good life — that was his ambition and he started to look for a suitable place. This he found in Liskeard a few months ago and with enthusiasm he busied himself putting it in order and to his liking. Sadly his dream was not to be fulfilled. On the night of 13 October he suffered a massive heart attack and died in his dream house, aged 66 years.

His funeral took place at Portchester Crematorium on Tuesday 25 October. The Chapel was packed with his sorrowing family, friends and many of his former RN colleagues. He was held in high esteem and affection and with respect by those who knew him well.

Surgeon Commander (D) Peter Sydenham Marshall Royal Navy

Peter Marshall, who died on 25 July 1994 aged 80, qualified LDS RCS(Eng) in 1938 after completing his dental studies at Guy's Hospital Dental School. He joined the Royal Navy in 1939 and of his new entry batch sadly he was the

only one to survive the Second World War

His war service included a commission in HMS *Shropshire* which in those pre-Radar days was principally engaged in the escort of convoys to Russia Indeed for this service he was very belatedly awarded a medal by the Gorbachev government After HMS *Shropshire* he also saw service at the Royal Naval College Dartmouth where in addition to providing treatment for the college staff and Royal Navy Cadets he looked after the dental needs of Free French officers and seamen amongst whom was the son of General de Gaulle

Immediately after the war he joined the Flagship of the Far Eastern Fleet HMS *Duke of York* in which he visited many of the Far Eastern ports including Hong Kong Singapore and Japan where he was an eyewitness to the havoc wrought by the atom bomb at Nagasaki

Then followed a group of appointments with the Fleet Air Arm including HMS *Ariel* and HMS *Osprey* and an extremely busy period based in Malta serving in the depot ships HMS *Tyne Forth* and *Ranpura* as Staff Dental Officer to Flag Officer Flotillas Mediterranean During the Canal crisis in 1956 Peter found himself sitting off Suez where good fortune enabled him to fetch up with his brothers one serving in the Army and the other in the Royal Air Force

His final sea going appointment was as Senior Dental Surgeon in the aircraft carrier HMS *Victorious* during the Malaysia Indonesian Confrontation of 1964 and 1965 *Victorious* was one of only two carriers at that time to carry two dental officers Peter's junior officer (EJG) remembers his time at sea with Peter as being a particularly happy one

It was a time of hard work at sea and hard play ashore One party on board a ferry boat cruising around Hong Kong Island at night is particularly remembered Peter usually regarded as a quiet and undemonstrative man surprised all on board by taking over the drums in the ship's jazz band and entertaining the revellers to a display of vigorous and not inexpert drumming!

Such were the changes that had taken place in the post war Navy that Peter claimed that at the 1964 Taranto Night Dinner in the Wardroom of *Victorious* he was the only officer present who was serving in the Navy on 11 November 1940 the day of that audacious but highly successful attack on the Italian fleet in the harbour at Taranto

Between sea going appointments he served in a variety of shore appointments which included time at HMS *Ganges* where amongst his many duties he gave invaluable support and encouragement to Surgeon Lieutenant (D) (later Surgeon Captain (D)) M N Naylor (RNR) who was then engaged in a series of studies to assess the value of fluoride containing toothpastes

His final appointment prior to his retirement on age in 1969 was as Senior Dental Surgeon at The Royal Marine Barracks Eastney

On leaving the Service Peter engaged for a short while in private practice which he readily admitted that he did not enjoy He then went to Graylingwell Hospital in Chichester where for 10 years he attended to the dental needs of mentally handicapped patients His kindness gentleness and deep understanding was greatly appreciated

Peter Marshall was a kind and generous man who was always ready to help and support others particularly his younger colleagues He had a forthright streak in his nature and when appropriate never flinched at telling senior officers in the most courteous manner exactly what he thought about things!

He tried always to remain in touch with those with whom he had served and never failed to write a congratulatory note when one of his young men was promoted or honoured On such an occasion one of us (EJG) was sent a set of pristine tropical shoulder boards on being promoted to Surgeon Commander (D)

In 1939 Peter married his wife Margaret who predeceased him by five months His daughter Sophie now Lady Laws to whom he was devoted was born in 1944, and her progress at school Oxford and in her subsequent academic career was a matter of supreme joy to him

MNN, EJG

Surgeon Lieutenant Commander Kenneth William Donald DSC MBE Royal Navy died 17 July 1994 at the age of 82

Surgeon Captain R R Pearson writes

To hear somewhat belatedly of the death of Professor Kenneth (or 'Ken' as he was almost universally known) Donald on 17 July 1994 at the age of 82 was particularly upsetting in a personal sense for in common with other icons from one's earlier years he had somehow seemed to be immortal Certainly Professor Donald was in every sense of the word a true icon for myself and the many other Royal Navy medical officers who had the good fortune to know him Even though his influence covered virtually all aspects of Royal Navy medical practice at one time or another those of us who

were involved to hyperbaric medicine and physiology have especial reason to remember his wisdom encouragement and insistence of the highest possible scientific standards

It is far from easy to summarise a life so full of significant achievement in so many areas of medicine and other obituaries have dealt with his achievements after leaving the Royal Navy in 1947 following wartime service It is however worth recording that his achievements included pioneering work on cardiac catheterisation and culminated in his appointment to the prestigious post of Emeritus Professor of Medicine at the University of Edinburgh Equally his wartime achievements were quite outstanding and the uncommon citation which accompanied his award of the Distinguished Service Cross for his part in the rescue treatment and subsequent evacuation from enemy occupied Norway of survivors from the second battle of Narvik disguises a tale of heroism daring and resourcefulness which would be beyond the imagination of most writers of fiction

His immense contribution to the field of hyperbaric medicine began while he was still serving and when he was appointed in 1942 to the Admiralty Experimental Diving Unit, which was then sited at the Siebe Gorman factory in Tolworth Surrey There he was involved in developments of underwater breathing apparatus work which ultimately led to his experiments which examined the effects on the central nervous system of breathing pure oxygen at increased pressure These experiments culminated in a series of publications which are now regarded as seminal documents in the field of oxygen toxicity It is a measure of his meticulous and intuitive approach to this research that the majority of his work remains valid to this day and is still the basis of the rationale for exposure limits to hyperbaric oxygen use throughout the world Thus began a lifetime of involvement in underwater matters which also saw him play a major part in the extension and refinement of the procedures used in buoyant ascent techniques used in escape from stricken submarines Yet again the current limits for this technique rely heavily on his efforts to produce a mathematical model of acceptable time/depth exposures

His more general contributions to the Royal Navy were channelled through the Medical Research Council sponsored Royal Naval Personnel Research Committee (RNPRC) of which he was an energetic Chairman from 1969 to 1986 He was also the Chairman of the associated RNPRC Underwater Subcommittee Apart from this formal involvement he and Sir William Paton provided an ever accessible source of advice for a succession of medical officers engaged in underwater medicine duties To the end of his life he remained up-to-date with all developments in hyperbaric medicine and physiology and his book *Oxygen and the Diver* published in 1992 was an updated appraisal of his own early and more recent work

He was also Chairman of an Advisory Committee to the Secretary of State for Scotland which advised on medical support for the North Sea offshore industry It was through this committee that he championed the cause for a national resource centre for hyperbaric research an initiative which led to the establishment of the National Hyperbaric Centre in Aberdeen

As a man he was a complex but immensely likeable person with a sometimes impish sense of humour However his insistence on scientific accuracy and honesty could lead to confrontation with those who were inadequately prepared or reached unwarranted conclusions Indeed it is fair to say that his occasional irascibility became somewhat feared and yet any public criticism on his part was invariably followed by private apology and the most generous and constructive support

My own memories are of a man who was an immense source of personal encouragement and whose comment was always as fair as it was stimulating I can think of no more fitting memory than a visit to the Clyde Submarine Base in 1965 when despite obvious and severe breathing problems he successfully negotiated the descent into and subsequent climb out of an SSBN I lost him temporarily on our late afternoon return to the Wardroom but guessed that he might be ready for a restorative gin I was too late — he had already persuaded the Commander to open the bar and was well into his second large one!

Like so many others I have been immeasurably privileged to have known a truly great man

Lieutenant Commander (MS) Colin Coburn Royal Navy died in RNH Plymouth 10 January 1995 aged 56

Commander D E Shone Royal Navy writes

Colin Coburn was born on 19 November 1938 in Sheffield He joined the Royal Navy as a Probationary Sick Berth Attendant in October 1957 having formerly been a bank clerk and

served in RN Hospitals Plymouth Haslar and Malta HMS *Drake* and HMS *Adamant* prior to being promoted to Wardmaster Sub Lieutenant in May 1970

Colin qualified as a Member of the Society of Radiographers in November 1961 and was employed in Radiography departments from that date transferring to the new Medical Technician branch in November 1965 He was an exceptional technician and a highly skilled radiographer abilities which were eclipsed only by his sporting talent and prowess A tower of strength in soccer and cricket teams he captained several sides with success inet and sportsmanship At the time of his promotion from the lower deck he had acquired a taste for golf which he eventually played at Command standard he continued to play representative cricket until his retirement in 1988

In his career as an officer he served in the RM Depot Deal HMS *Neptune* as a Health Physicist HMS *Defiance* HMS *Daedalus* with the RN Mass Miniature Radiographic Service HMS *Dolphin* RNH Haslar as PSO and with SRA (Operational Medical Services) where he was secretary to two successive Admirals He graduated from the RN Staff Course in 1984

Colin was an officer of endless good humour and patience transparent integrity and strong loyalty his tall figure establishing an influential presence and inspiring confidence

Following retirement from the Royal Navy he was appointed Administrator of the Torr Home for the Blind in Plymouth where for six years he was a popular and much loved manager Even when faced with his terminal illness it was typical of his devotion to duty that he provided support and advice from his sick bed

He is survived by is wife Marlene (née Etherton) whom he married on 26 March 1960 and their son and daughter

Wardmaster Lieutenant Commander Patrick McGreen died 9 January 1995 aged 76 Patrick McGreen was born on 8 October 1918 in Kilkee County Clare Eire

He entered the Royal Navy on 26 November 1936 at HMS *Drake* as a Probationary Sick Berth Attendant thereafter serving in RNH Plymouth HMS *Tamar* (Hong Kong) *Drake* *Indefatigable* *Rooke* and *Nuthatch* (RNAS Anthorn in Cumberland) achieving rapid advancement to Sick Berth Chief Petty Officer by January 1946 and then promotion to Wardmaster Sub Lieutenant in 1956

Whilst serving in *Tamar* in December 1941 he was attached to the destroyer HMS *Thracian* which was bombed and sunk by Japanese aircraft whilst in Hong Kong harbour McGreen swam ashore and in the company of another rating walked to the RN Hospital and reported for duty only to discover that they had walked through enemy lines He was taken prisoner by the Japanese and held in various warehouses before being shipped out on 27 September 1942 in the transport SS *Lisbon Maru* which was torpedoed at dawn on 1 October by a US Submarine unaware that POWs were on board The *Lisbon Maru* lay helpless for over 12 hours and the 1 800 POWs suffered in appalling conditions in which they were battened down in the holds no food was issued and latrines overflowed That evening a Japanese ship came alongside but only the Japanese guards transferred across and deserted the prisoners At 0630 the following morning the ship lurched and began to flood and realising that all was not well the prisoners cut open the covers of the hold and broke out onto the upper deck The sea poured in and many men were washed back into the bottom Those survivors in the water were shot at or run down by the enemy many swam ashore to the Chinese Islands and eventually some were picked up by Japanese ships Of the 1 800 POWs carried only 960 survived the incident many more later dying in POW camps McGreen was imprisoned at Kobe on mainland Japan where prisoners were taken to docks every day and forced to work Some prisoners wore singlets which were so encrusted with sweat and dirt that they appeared to be growing to the skin McGreen would take men into the sea to soak off their clothing in salt water but received the butt ends of Japanese rifles for his trouble McGreen spoke passable German which he used to good effect when he found a sympathetic German Medical Officer who passed over drugs and medicines for the benefit of the British prisoners

He was repatriated in February 1946 and subsequently Mentioned in Dispatches for good services whilst a Prisoner of War in the Far East appending an oak leaf to his Pacific Star medal The greater reward was the affection and respect which his fellow captives retained for him years later it was not unknown for him to be spotted on a railway station and embraced to the announcement this man saved my life

In 1947 he qualified as a Laboratory Assistant at the RN Medical School at Clevedon in Somerset

Promoted to Wardmaster Sub Lieutenant in

1956 he served in HMS *Daedalus* (Arncl) RNH Malta *Drake* and RN Hospitals Plymouth and Haslar His promotion to Wardmaster Lieutenant Commander after only two years in the rank of Lieutenant and his service as Senior Wardmaster Officer in all three RN major hospitals bore witness to his reputation as an expert in Naval Hospital administration He retired in 1968 to take up an appointment as Bursar of Accommodation with the United Sheffield Hospitals

Of wiry build and always with an abundance of energy Pat McGreen enjoyed a reputation of consistency loyalty smartness and alertness and of holding the welfare of his juniors close to his heart

He married in December 1948 and is survived by Audrey (nee Tait) and their son and daughter

Surgeon Lieutenant Commander William Ian Martin VDR RNR died 17 November 1994 at the age of 78 He joined the RNVR as an Acting Surgeon Lieutenant 8 July 1952 and was confirmed in rank a year later He was an obstetrician at the Ruchazie Memorial Hospital Glasgow from August 1954 and latterly a Consultant Gynaecologist in Greenock He was promoted Surgeon Lieutenant Commander 8 July 1960 and awarded the VRD in 1964 Although he was due to retire in January representations were made to the Admiralty and he was reinstated on the Active List until 5 January 1974 retiring finally aged 55

Surgeon Lieutenant Commander Brian Wilfrid Petty RD RNR Consultant Radiologist at the Royal Infirmary and St Luke s Hospital Huddersfield from 1966 until he retired in 1992 died on 8 July 1994 aged 67 years

Having qualified MB ChB from the University of Birmingham in 1950 he wrote to the Medical Director General (Naval) expressing his enthusiasm to spend his National Service in the Royal Navy That initiative was rewarded when in May 1952 he joined the RNVR as a Temporary Acting Surgeon Lieutenant This was the beginning of a long and mutually fruitful relationship with the medical service of the Royal Navy

During his National Service he served in the survey vessel HMS *Dalrymple* surveying in the Persian Gulf A number of shoals to the east of Jazirat Dalma were named for him — Petty s Patches The name remains to this day on Admiralty Chart 3951

In May 1954 Surgeon Lieutenant Petty transferred to the Permanent RNVR He was awarded the Reserve Decoration in 1967 promoted Surgeon Lieutenant Commander in May 1968 and retired from the RNR in 1975 after three years extension of service due to a shortage of radiologists Over these years he served in a locum capacity in radiology at several of the Naval Hospitals at home and abroad where his skills and vast experience were greatly valued

Any personal reminiscences of the above officers will be welcomed by the Editor

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Service News

Closure of the Royal Naval Hospital, Plymouth

Two principal events have been held to mark the closure of the Royal Naval Hospital after 235 years service to sick and wounded seamen and marines put ashore — and many others besides

A Service of Thanksgiving was held in the Church of the Good Shepherd on the evening of 9 March This was a family affair attended by serving and retired members of the Royal Naval Medical Service who had served at the hospital those who had contributed to the life of the hospital in other ways past patients and their friends and family The sermon was preached by the Venerable Michael W Bneks QHC BD AKC Director General Naval Chaplaincy Service and Chaplain of the Fleet The service was followed by an informal reception in the Geneva Clnb

The second event was a Reception given on 15 March by the Medical Officer in Command and Officers of the hospital for some 750 guests — senior officers previous staff friends of the hospital and current and future colleagues from the National Health Service and Defence Medical Services The Surgeon General was the principal speaker and in his address which follows caught the mood of the evening a happy mixture of nostalgia for the closing hospital and excited anticipation for the future in the Royal N'val District Hospital Unit at Derriford

When the Royal Naval Hospital here in Stonehouse in Plymouth was finally completed in 1762 — Nelson was only four years old — and the Seven Years War was at its height there was a desperate requirement for accommodation for the sick and wounded in the Army and Navy HMS *Canterbury* the hospital ship anchored in the Sound was full and the overflow housed in a warehouse at the bottom of George Street Indeed the hospital was obliged to take 100 patients in 1760 two years before completion such was the pressure But it had been like that on and off for 100 years In the middle of the 17th century 1652 to be exact the government went to war with Holland the first of a whole series of skirmishes in Europe in pursuance of trade and for the first time literally thousands of sick and wounded seamen were deposited on the southern shores of England with nowhere to go and no one to care for them Everyone was concerned John Evelyn the famous essayist and diarist one of the original Commissioners for the Sick and Hurt Board of the Admiralty was so concerned that he approached the then Secretary of the Navy Samuel Pepys who records in his diary Away to Evelyn s to discourse on the confounded business of sick and wounded sailors wherein he and we are so out of order Their efforts were unsuccessful mostly because every time decisions were about to be made the war came to a temporary halt and the requirement no longer existed

It was not until 1744 that King George II approved the building of Naval hospitals in Portsmouth Chatham and Plymouth Not at his to be noted for purely humanitarian reasons but more on the purely practical grounds of an acute manpower shortage Many of the sailors of that time were impressed men victims of the Press Gangs who deserted as soon as they could walk or even crawl The petition to the King was quite clear

> Your Majesty s Service suffers so greatly from the loss of seamen either by death or desertion who are sent on shore for the cure of their distempers that we think it our duty to humbly renew our former applications

And so it was that sites for Portsmouth and Chatham hospitals were chosen and building commenced Here in Plymouth there was a delay of nearly tea years before anything happened This was quite deliberate the Admiralty were anxious to see Haslar progressed before paying out money for Plymouth and indeed they learnt many lessons Not the least of these was that Haslar was going to cost £100 000 instead of the £38 000 originally allocated — because of this the fourth wall of the quadrangle was never completed When this hospital was eventually built — in fact it caught up with Haslar to open at much the same time — the architect William Robinson had designed a hospital that was the most up to date hospital in Europe if not the world and which was the role model for hospital buildings for 100 years vastly ahead of its time

In the ensuing 235 years Robinson s buildings have changed little and the hospital has taken patients from every war and battle from Trafalgar to the Falklands Northern Ireland and the Gulf and in the 1960s it began officially to take civilian National Health patients

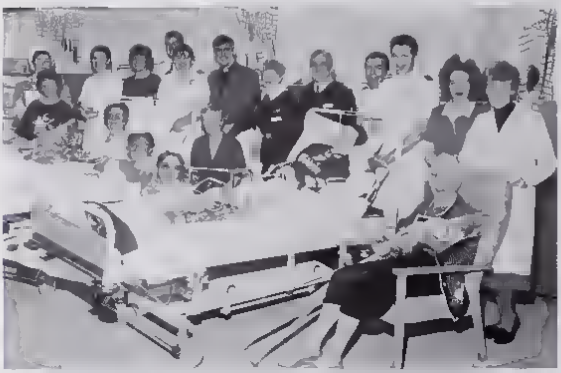
Being the smaller of the two UK Naval hospitals has meant that its future has often been in doubt particularly in peacetime when the requirement for purely Naval hospitals is questioned (the original reason why the building of hospitals was delayed for 100 years) I remember on joining here as a young Surgeon Lieutenant in 1964 being told to make the most of it as it was about to close I was to hear these words again as its Medical Officer in Charge in the 80s and yet again in the 90s as the Admiral in Residence So why close it now? The answer is fairly straightforward the requirement in purely military terms no longer exists One of the most amazing events in contemporary history in an age of amazing events like men on the moon has been the collapse of communism and the total disintegration of the Warsaw Pact In one fell swoop the threat of all out war to this country has disappeared and with it much of the requirement for huge armed forces and their medical support No one in their right minds believes we live now in a stable world with terrorism and fundamental religions threatening from the wings but we should rejoice that World War III seems at the very least to be remote

So this lovely old place so expensive to maintain must finally close as a hospital But it will be preserved and those that know will marvel at what was achieved here in the 235 years of its existence when it carried out with pride the original mandate

To alleviate the sufferings and treat the diseases of our seamen and marines

and much more besides

Past and present Medical Officers in Command and Matrons of the Royal Naval Hospital Plymouth *Standing from left to right* Surgeon Captain D J Swain LVO QHP Royal Navy Chief Nursing Officer G M Cranfield ARRC QARNNS Surgeon Captain M J Mann FRCA Royal Navy (Retired) Surgeon Rear Admiral D A Lumsman CB LVO Surgeon Vice Admiral A L Rettell QHS FRCA Surgeon Rear Admiral T R W Hampton CB Surgeon Captain J A M Wright Royal Navy (Retired) Chief Nursing Officer P M Hutchings ARRC QARNNS (present Matron) Surgeon Captain C W Evans Royal Navy (present Medical Officer in Command) *Seated from left to right* Miss J N Last RRC Miss P Gould CBE RRC Miss M S Fetherston Dilke CBE RRC Miss J Robertson CBE RRC Miss V C Fisher RRC Miss E T M McCloskey ARRC



The last patients in RNH Plymouth with ward staff. All patients were presented with a bouquet of flowers and Hospital crest by the Matron CNO P M Hambling ARRC QARNNS

Today another chapter in the history of the Royal Naval Medical Service is closed but as is the way of things another chapter opens and we look forward to a new and very different future in Derriford and at the Tri Service Royal Hospital at Haslar However I venture to suggest that all those of us who have served or worked or been a patient here and who have grown to love it will remember with great affection the warmth and friendliness that exudes from every brick and stone and life will never be quite the same for us without it

Flag Officer Plymouth s Royal Marine Band brought the evening to a close with an excellent performance of the ceremony of Beat Retreat and Sunset — and brought the suspicion of a tear to many an eye as marching off into the gloaming they played Auld Lang Syne

Opening of RNDHU Derriford

On 12 April the Surgeon General Medical Director General (Naval) and Matron in Chief QARNNS joined civilian and Royal Naval staff and dignitaries to witness the formal opening of the Royal Naval District Hospital Unit at Derriford on the northern perimeter of the City of Plymouth The ceremony was conducted by Air Chief Marshal Sir John Willis KCB CBE RAF Vice Chief of the Defence Staff who unveiled a plaque at the main entrance to the hospital

RNH Haslar to revert to original title

On 15 September 1744 the Navy Board presented a Memorial to His Majesty King George II in Council proposing to build hospitals at Portsmouth Plymouth and Chatham for the reception and cure of Seamen sent on shore from His Majesty s Ships The hospital serving the Portsmouth area was built at Gosport and named the Royal Hospital Haslar It admitted its first patients on 10 October 1753 In 1954 the hospital was renamed the Royal Naval Hospital Haslar

The hospital loses its single service identity on 1 April 1996 when it becomes the single joint service core hospital under a rotating command within a newly formed Secondary Care Defence Agency owned by the Surgeon General The title

Surgeon Commanders N P J Cripps, J K Campbell, T H Cahill, D N Tullich and S T Hutchinson with the President of the Royal College of Surgeons of Edinburgh, Professor Sir Robert Shields, after the presentation of Certificates of Fellowship at the meeting at Royal Naval Hospital, Haslar in February

Royal Naval Hospital will not reflect this new identity. As a consequence Her Majesty the Queen has been graciously pleased to approve the change in title to the original 'Royal Hospital, Haslar'.

Royal College of Surgeons of Edinburgh visits Royal Naval Hospital Haslar

The Royal College of Surgeons of Edinburgh paid the Royal Naval Medical Service a signal compliment when it chose the Royal Naval Hospital at Haslar as the venue for the academic sessions of its Spring Meeting in February.

For the 90 or so delegates gathered on a somewhat showery morning, the day began with a demonstration of the skills of the instructors at the Submarine Escape Training Tank at HMS *Dolphin*. Visits to the Submarine Museum and HMS *Alliance* followed — a nostalgic occasion for some.

The afternoon academic session in RNH Haslar was chaired by Surgeon Commander D N Tullich. The Professor of Naval Surgery gave a clear account of surgical training in the Defence Medical Services, explaining how this must not only produce sub-specialist surgeons working to the highest standards but also fit them for service as a military surgeon in the operational scenario. Seven other high quality papers covering a wide range of surgical topics followed. Two of these are published in this edition of the Journal and abstracts of the remainder will be in the Summer edition.

After tea the President of the College

Professor Sir Robert Shields having entered the lecture room with Officers of the College in procession behind the College Mace introduced Surgeon Commander N P J Cripps recently winner of the Bayer Diagnostics Prize at the Royal Society of Medicine who was to give the College Lecture at this special meeting. He gave an enthralling and persuasive account of his research and the conclusions he has reached on the nature and management of Intestinal Primary Blast Injury.

There then followed a rare event Certificates of Fellowship and of completion of Higher Surgical Training are seldom presented without the College but an exception was made on the occasion of the visit to Haslar when Surgeon Commanders Tulloch Cahill Campbell and Hodkinson all duly begowned were given their certificates by the President.

The day concluded with a fine dinner in the Wardroom HMS *Dryad*. Responses to the speech by the President of the College were made by Surgeon Commodore I L Jenkins on behalf of the Royal Naval Medical Service and the College Vice President on behalf of the guests.

Commemorative Service

It is intended to hold an ecumenical Service to commemorate the work of the Armed Forces Medical and Nursing Services during the last war on Wednesday 14 June 1995. It is hoped that many uniformed personnel and veterans will be able to attend.

Service to Commemorate the work of the Armed Forces Medical and Nursing Services during World War II
3pm Wednesday 14 June 1995
St Clement Danes Church
The Strand London WC2

Preacher
The Right Reverend Maurice Wood DSC MA
Honorary Chaplain to the
Commando Association
Previously Bishop of Norwich

For further details 0171 305 5298

The National Ex-Prisoner of War Association

The 8th annual Ex Prisoner of War Reunion will be held at Warners Holiday Village Hayling Island from Friday 20 October to Monday 23 October 1995. Ex Prisoners of War relatives and/or supporters requiring further details are to send a SAE please to

Charles Jago
(Reunion Organiser)
74 Norfolk Road
West Harnham
Salisbury SP2 8HG
or telephone 01722 333599

Senior Nursing Officer Caroline Doughty QARNNS receiving the Royal Naval Sailing Association's Lady Mackworth Trophy for her important contribution to Service sailing. The trophy was presented by Lady Mackworth herself, wife of Captain Sir David Mackworth Bt Royal Navy

Surgeon Lieutenant Commander S J Clark Royal Navy being presented with his prize for the best presentation during 1994 by a junior member of staff of the Surgical Division, Royal Naval Hospital Haslar, by the Medical Officer in Command, Surgeon Captain (now Surgeon Commodore) I L Jenkins QHS

Flag Officer Submarines

COMMENDATION

Captain D J Rus[illegible] Officer HMS V[illegible] presenting S[illegible] with the [illegible] OSM[illegible] Commendation

On Sunday 19 July 1994 HMS *Vanguard* was asked for medical and professional assistance by RMAS *Newton* following an explosion on her upper deck within a launcher for Air Launched Marine Sound Signals being deployed by *Newton* in the course of a fleet trial. The initial report was that there had been one fatality and three others injured. Surgeon Lieutenant D G S Blair Royal Navy the Medical Officer led the medical team from HMS *Vanguard*.

On arrival in RMAS *Newton* Blair was briefed on the casualties by the LMA onboard. He proceeded to stabilise and monitor the condition of the injured personnel one of whom had sustained potentially serious injuries to his face and head. Once satisfied with the immediate condition of the injured Blair performed an examination of the fatality on the after deck and pronounced him dead.

As a result of the nature of the injuries to the most serious casualty it was decided that Blair should remain with *Newton* for her return to port in Miami Florida. While on passage he continued to administer medication and monitor the injured personnel. He organised and supervised the disposal of the body of the dead man with the utmost sensitivity and discretion. Blair spent considerable time and care in counselling and providing excellent professional support to the Master in these harrowing circumstances. Finally on arrival in Miami he took charge expertly of the handover to the shore medical authorities giving comprehensive reports on the patients.

Throughout this disturbing incident, Surgeon Lieutenant Blair for the most part acting independently performed his duties in an exemplary and thoroughly professional manner.

I commend Surgeon Lieutenant Blair for his actions and conduct which were in the very best traditions of the Service and Medical Profession earning him the praise and gratitude of all those onboard RMAS *Newton*.

R C Lane-Nott
Rear Admiral

NEW YEAR'S HONOURS 1995

Lieutenant Commander (MS) John Hammond who retired from the Royal Navy in 1980 has been awarded the OBE for services to health care in recognition of his service as Commandant of the St John Aeromedical Service

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS

APPOINTMENTS AND PROMOTIONS

To Surgeon Lieutenant Commander
C W Booth R L R Dunn C J Hand

To Surgeon Lieutenant Commander (D)
D K Riden B G I Jameson C C Morrison
M F Thomas K G Lamb

To Surgeon Lieutenant
M D Brinsden

To Acting Surgeon Lieutenant
S Nicholl

TRANSFERS TO FULL CAREER COMMISSION

Surgeon Lieutenant Commander D J Birt
Surgeon Lieutenant Commander (D) D K Riden
Surgeon Lieutenant J G Shurpley

TRANSFERS TO MEDIUM CAREER COMMISSION

Surgeon Lieutenant Commander (D)
D J McJarrow
Surgeon Lieutenant (D) N R Turnbull

HIGHER QUALIFICATIONS

Surgeon Captain D M Crean — FRCP(Ed)
Surgeon Commander P A Waugh — MFOM
(and awarded the Dr Peter Taylor Prize for the best dissertation submitted in 1994)
Surgeon Lieutenant Commander S E P Bree — FRCAnaes

NEW ENTRIES

Surgeon Sub Lieutenants J F Welsh
F J H Brims J D McIntosh E M Knight
S R Davies D P Weldon E MeA Armstrong
W D Norris
Surgeon Snb Lieutenant (D) M H Wingfield

PLACED ON EMERGENCY LIST

Surgeon Lieutenant Commanders T S J Walker
C W Booth
Surgeon Lieutenant Commander (D)
C C Morrison

COMMISSIONS TERMINATED

Surgeon Lieutenant Commander K E Blaydes
Surgeon Lieutenant P A Mançais E J Lacey

RETIREMENTS

Surgeon Captains D J McKay D C Whyte
Surgeon Commanders R A Adley J W Turvill
Surgeon Commanders (D)
D A Leighton Goodall S D B Taylor

MEDICAL SERVICES

Medical Assistant M S Moore has been awarded a Bronze Medal in their Health and Social Care category by the City and Guilds of London Institute for his work in qualifying for the Certificate in Emergency and Clinical Care Part I

HIGHER QUALIFICATIONS

Lieutenant Commander J E Dalgliesh — PhD

Lieutenant K J N C Rich has [illegible] MSc at [illegible]

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

APPOINTMENTS AND PROMOTIONS

As Matron Royal Naval Hospital Haslar 13 February 1995
Chief Nursing Officer J Bancroft

To Superintending Nursing Officer
D V Aldwinckle

To Senior Nursing Officer
V S Ferguson

To Nursing Officer
L E Mortlock

NEW ENTRIES

Senior Nursing Officer T Mallows

RETIREMENTS

Commandant Nursing Officer
J Talky RRC QHNO
Senior Nursing Officers R Muddiman
M H Harvey

COMMISSIONS TERMINATED

Senior Nursing Officer F A Hall

ROYAL NAVAL RESERVE

HIGHER QUALIFICATION

Surgeon Commander J Maitland RD (*Prevadeur*) has been awarded the Diploma in Practical Dermatology by the University of Wales College of Medicine

RESIGNATIONS

Surgeon Lieutenant Commander
J J M O Sullivan — *Eagle*

RETIREMENTS

Surgeon Commander I W Robertson — *Dalriada*
Surgeon Lieutenant Commander C T Currie RD — *Scotia*

REMOVED FROM ACTIVE LIST

Surgeon Lieutenant W M Brickett (*Forward*)

Papers in the Scientific Literature, Presentations etc

Birch R, Noble D, Greenhaff P L The influence of dietary creatine supplementation on performance during repeated bursts of maximal isokinetic cycling in man *Eur J Appl Physiol* 1994 69 268 270

Broome J R Dutka A J Mekjavic G A Exercise conditioning, reduces the risk of neurologic decompression illness in swine *Undersea & Hyperbaric Med* 1995 **22**(1) 73-85

Broome J R Pearson R R Dutka A J Failure to prevent decompression illness in rats by pretreatment with a soluble complement receptor *Undersea & Hyperbaric Med* 1994 **21**(3) 287 295

Broome J R Dick E J jr Dutka A J Multifocal CNS hemorrhage as a cause of decompression treatment failure in a pig model of neurological decompression illness *Undersea & Hyperbaric Med* 1994 **21**(suppl) 69 70

Broome J R Mekjavic G A Dutka A J Physical conditioning reduces the incidence of neurological DCI in pigs *Undersea & Hyperbaric Med* 1994 **(21**(suppl) 69

Cooper G J Conlson N M Sedman A J Pearce B P Brett S J **Cripps N P J** Marsden A Gotts P A trauma attenuation backing for body armour CBDE Technical Paper 766

Cripps N P J The intestinal injuries of primary blast [Lecture] Royal College of Surgeons of Edinburgh Spring meeting with the Royal Navy on 24 25 February 1995 at Royal Naval Hospital Haslar

Cripps N P J Cooper G J The mechanism of intestinal contusion in blunt abdominal impact [Abstract] *Br J Surg* 1994 **81** 5126

Cripps N P J Colorectal cancer screening in a district general hospital [Presentation] Wessex Gut Club May 1994

Cripps N P J Colorectal cancer screening in a district general hospital [Presentation] Wessex Surgical Registrars Prize May 1994

Cripps N P J Cooper G J The influence of personal blast protection on the distribution and severity of primary blast injury to the gut [Presentation] 7th International Symposium of Weapons Traumatology and Wound Ballistics St Petersburg Russia 20 23 September 1994

Cripps N P J Primary blast injury to the gut [Presentation] Joint meeting of the United Services Section of the Royal Society of Medicine and the Section of Coloproctology on Colonic trauma — modern concepts in early and late management 13 October 1994

Cripps N P J Heald R J Family based colorectal cancer screening in a district general hospital [Presentation] XVIIIth Tri Service Surgical Meeting RMCS Shrivenham 20 21 October 1994

Cripps N P J Colorectal cancer in the Royal Navy — an opportunity to intervene? [Presentation] XVIIIth Tri Service Surgical Meeting RMCS Shrivenham 20-21 October 1994

Cripps N P J Cooper G J The mechanism of intestinal injury in non penetrating impact [Presentation] Bayer Diagnostics Prize winning entry Royal Society of Medicine December 1994

Cripps N P J The mechanism of colonic injury in blunt trauma Car crusher colon [Letter] *Br J Surg* 1994 **81** 474-475

Cripps N P J Small bowel obstruction after laparoscopic cholecystectomy [Letter] *Hospital Update* 1994 **20** 466

Cripps N P J Colorectal Cancer Incidence and Screening for early diagnosis [Presentation] Changing habits a review of bowel cancer Basingstoke McMillan Service 14 October 1994

Dick E J jr **Broome J R** Occult spinal cord damage in clinically normal pigs following diving *Undersea & Hyperbaric Med* 1994 **21**(suppl) 68

Dutka A J **Broome J R** Spontaneously hypertensive rats tolerant to endotoxin do not develop decompression illness *Undersea & Hyperbaric Med* 1994 **21**(suppl) 92 93

Garth R J N Brightwell A P A comparison of packing materials used in nasal surgery *J Laryngol Otol* 1994 **108** 564 566

Garth R J N Blast injury to the auditory system A review of mechanisms and pathology *J Laryngol Otol* 1994 **108** 925 929

Hague S Collin R Blepharoplasty and ptosis *Current Opinion in Ophthalmology* 1994 **5** V 67 73

Houston A S **Kemp P M Macleod M A** A comparison of four methods of assessing abnormalities in HMPAO rCBF SPECT images *Eur J Nucl Med* 1994 **21** S75

Houston A S **Kemp P M** Griffiths P T **Macleod M A** An estimation of noise levels in HMPAO rCBF SPECT images using simulation and phantom data comparison with results obtained from repeated normal controls *Phys Med Biol* 1994 **39** 873 884

Houston A S **Kemp P M** Wilkins G P Iorns R J **Cripps N P J** Neural networks and rule induction applied to a database for colorectal cancer [Abstract] *Nucl Med Commun* 1994 **15** 239 240

Houston A S **Kemp P M Macleod M A** Norsworthy J I Wilkins G P Iorns R J **Cripps N P J** Analysis of a nuclear medicine database for colorectal cancer using expert system rule induction and neural networks Proceedings of the International Conference on Neural Networks and Expert Systems in Medicine and Healthcare 1994 (NNESMED 94) 303 309

Houston A S **Kemp P M** Wilkins G P Iorns R J **Cripps N P J** Neural networks and rule induction applied to a database for colorectal cancer [Presentation] BNMS 22nd Annual Congress London 1994

Houston A S **Kemp P M Macleod M A** A comparison of four methods of assessing abnormalities in HMPAO rCBF SPECT images [Abstract] World Congress of the World Federation of Nuclear Medicine and Biology Sydney October 1994

Kemp P M Psychometric testing and cerebral perfusion in amateur boxers and controls MD thesis 1994 University of Southampton

Kemp P M Houston A S **Macleod M A** Cerebral perfusion and psychometric testing in amateur boxers and controls *Eur J Nucl Med* 1994 **21** S33

Kemp P M Houston A S **Macleod M A** Cerebral perfusion and psychometric testing in amateur boxers and controls [Abstract] World Congress of the World Federation of Nuclear Medicine and Biology Sydney October 1994

Macleod M A Houston A S **Kemp P M Francis T J R** The assessment of dysbaric induced cerebral perfusion defects in divers using voxel by voxel multivariate analysis *Eur J Nucl Med* 1994 **21** S34

Macleod M A Houston A S **Kemp P M** The assessment of dysbaric induced cerebral perfusion defects in divers using voxel by voxel multivariate analysis [Abstract] World Congress of the World Federation of Nuclear Medicine and Biology Sydney October 1994

Murrison A W Retinal Fluorescein Angiography in Royal Navy Divers [Dissertation] London Faculty of Occupational Medicine 1994

Murrison A W *Ophthalmic Defects in Divers* In Eds Hope A Lund T Elliott D H Halsey M J Wing H *Long Term Health Effects of Diving* University of Bergen 277 283

Murrison A W Glasspool E Pethybridge R J **Francis T J R** Sedgwick E M Neurophysiological assessment of divers with medical histories of neurological decompression illness *Occupational and Environmental Medicine* 1994 **51** 730 734

Pearson C R Thomas M R **Garth R J N** Lateral sinus thrombosis presenting with extracranial head and neck abscesses *J Laryngol Otol* 1994 **108** 779-782

Pingree B J W Pethybridge R J A comparison of the efficacy of Cinnarizine with Scopolamine in the treatment of seasickness *Aviat Space Environ Med* 1994 **65**(7) 597 602

Singh P **Taylor R H** Colin Jones D G Prolonged remission of oesophagitis does not alter the magnitude of oesophageal acid exposure *Scand J Gastroenterol* 1994 **29** 11 16

Singh P **Taylor R H** Colin Jones D G Oesophageal motor dysfunction and acid exposure in reflux oesophagitis are more severe if Barrett s metaplasia is present *Am J Gastroenterol* 1994 **89** 349 356

Smith M S Sickness absence in male Royal Naval medical and dental branch ratings 1981 1989 *Occup Med* 1995 **45**(1) 40 44

Smith R W Ellison D W Jenkins A E Gallagher P G Cawley M I D Cerebellum and brainstem vasculopathy in systemic lupus erythematosus two clinico pathological cases *Ann Rheum Dis* 1994 **53** 327 330

Smith R W Papadopoulos E Mani R Cawley M I D Abnormal microvascular responses in lateral epicondylitis *Br J Rheumatol* 1994 **33** 1166 1168

Smith R W Crook P L Cawley M I D A survey of arthrography and intra articular corticosteroid injection of the hip joint [Abstract] *Br J Rheumatol* 1994 **33**(suppl 1) 76

Smith R W Egger P Coggon D Cawley M I D Cooper C Defining osteoarthritis of the hip joint A study of radiographic criteria in elderly women [Abstract] *Br J Rheumatol* 1994 **33**(suppl 1) 81

Smith R W Egger P Coggon D Cawley M I D Cooper C Osteoarthritis of the hip joint and acetabular dysplasia an epidemiological radiographic study of elderly women [Abstract] *Br J Rheumatol* 1994 **33**(suppl 2) 29

Smith R W Cawley M I D A case of male osteoporosis [Abstract] *Proceedings of the fifth meeting of the Wales South West and Wessex Osteoporosis Society* November 1994 C2

Smith R W Male Osteoporosis [Presentation] Wales South West and Wessex Osteoporosis Club Southampton University November 1994

Smith R W Acetabular Dysplasia and Osteoarthritis of the Hip Joint in Elderly Women [Presentation] South Wales South West and Wessex Rheumatology Club Plymouth November 1994

Sykes J J W Medical aspects of scuba diving *Br Med J* 1994 **308** 1483 1488

Taylor R H First steps in research *Modern Midwife* 1994 **4**(No 3) 29 31

Taylor R H The ethics of rationing and choice in health care [Dissertation] Worshipful Society of Apothecaries of London Diploma in the Philosophy of Medicine 14 September 1994

Notices

Editorial Committee

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A Winter Spring and Summer edition of the Journal of the Royal Naval Medical Service is published each year one volume comprising three issues The rates of subscription are

1 Serving and retired RN and RNR personnel members of the Army and Royal Air Force Medical Services Consultants to the Royal Navy other MoD or civilian personnel — £12 00 per year post free
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Notice to Authors

Contributors to the Journal of the Royal Naval Medical Service are reminded that the full text of 'Notice to Authors' was published in the Summer 1994 issue and are advised to consult this before submitting papers to the Editor for consideration for publication in the Journal

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JOURNAL of the ROYAL NAVAL MEDICAL SERVICE

Neither the Ministry of Defence nor the Editorial Committee of the JRNMS accept responsibility for statements made or views put forward in this Journal
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[illegible]over Illustration: The Lady of the Borough of Gosport. On the morning of 18 September 1995 a large contingent of the [illegible] [illegible] through Gosport with bayonets fixed, flags flying and drums beating, rights [illegible] Borough 25 [illegible]

Surgeon Captain T H Shepherd passes charge of Royal Naval Hospital Gibraltar to Commander (MS) D E Shone on 29 June 1995

Editorial

The challenge of the operational roles of the Royal Naval Medical Service in peace and war is the major single factor which sets us apart from our civilian colleagues. These roles are the very reason for the Service's existence and add spice and purpose to our professional lives. They demand naval and special medical skills and thus greatly influence the training we require to be successful in supporting projection of the United Kingdom's influence abroad as directed by Her Majesty's Government.

The medical element of this training is increasingly gained in the National Health Service. This vital contribution made by these hospitals and their staff to the Royal Navy and thus to our country's standing in the international community can easily pass unrecognised. It should be proclaimed in local communities. Trust managers should bear it in mind when frustrated by the limited dependence their hospitals can place on our continuous contribution to the provision of secondary care services at home.

The operational roles of the Royal Naval Medical Service should be reflected in its Journal. In this edition clinical and research papers are complemented by two such papers. The first, a view from the Centre of the various and changing basic roles of the Royal Navy, should provoke thought and perhaps comment. The other, the Medical Officer's account of 47 RMCdo's battle for Port en Bessin, Normandy in June 1944, attracted me for several reasons. It is a ripping tale splendidly told and a fitting tribute to the officers and men of the Commando and the local people who helped them. Moreover, it contains valuable lessons for medical officers of today on the care of casualties of a moving force and, not least, the value of training to face the rigours of the operational scenario.

Visitors to the charming fishing port of Port en Bessin, but a short diversion from holiday routes from the ferry ports of Le Havre, Caen and Cherbourg, will find it easy to compare up images of these darker days described by Professor Forfar in this paper and, viewing the full top defences from the outer mole, will appreciate the devastating field of fire from the flak ships and wonder at the determination and valour of the liberators.

Finally, my hand has been light on the tiller of the production of this edition as much of my time since Easter has been spent under the healing influence of Naval and civilian colleagues to whom I am greatly indebted. Surgeon Captain (D) Holland has led the Editorial Committee in my absence and has written the guest editorial which follows.

G H G McMillan
Surgeon Captain

A plague of acronyms

One of the curses of communication in modern times, particularly within the services, is the excessive use of acronyms. Quite when or why these unpleasant items caught on is not known but caught on they certainly have. In medicine their use is at least understandable as medical conditions and their descriptive names become ever more complex. The use of initial letters which may or may not produce an easily remembered acronym prevents endless repetitions of groups of complicated compound words of Graeco Roman derivation.

But the enthusiasm for creating an acronym for almost every organisation and sub organisation now knows no bounds. There appears to be a feeling that if a job, group or whatever does not have an acronym it has no worthwhile existence. One can only conclude that a great deal of time is spent constructing a title that will produce a snappy acronym. Unfortunately, as there is no national database of acronyms that can easily be referred to, any one acronym may belong to several different organisations at the same time so, depending on your service or civilian occupation, the same set of initials may have an entirely different meaning. Added to this is the increasing penchant for changing the titles of organisations as they merge or become overtaken by events so just as everyone becomes used to one acronym it is changed for another. While this may be fun for a small number of cognoscenti it is tediously confusing for the rest of humanity.

Committee meetings are now an arena for the casual distribution of acronyms. These fall on the gathering less like the gentle rain from heaven but more as a tide of confusion. Time spent trying to work out what one acronym might mean

is time wasted as several others are sure to follow in quick succession That no one ever asks what they mean is a curious phenomenon of committees presumably due to an unwillingness to appear unknowing in front of one s peers Perhaps if every acronym was challenged as it was spoken the habit would fade if only to speed up the proceedings

There is a serious point to this tirade Writers of papers for learned journals should bear in mind that the ability to hold the definitions of small groups of initials in the memory other than momentarily is not universal Papers which are peppered with acronyms become increasingly more difficult to read as the reader desperately attempts to define each one every time it appears and the necessity to turn back to where the definition may be found is the ultimate bar to easy reading Authors who write their papers to be read rather than just as an entry in the *Index Medicus* should present them in a form in which the majority of readers can gain their information in the most effortless way

While the authors of medical papers can be gently criticised those of administrative and management papers minutes and memoranda must severely be taken to task The style that has become accepted for such writing does not lean towards readability Additionally in many cases they fail to define their acronyms at all and leave the reader groping with the last known meaning which may or may not be right Allied to this is the popular new management speak which has introduced convoluted Americanisms in place of clear concise English Again one presumes these papers are meant to be understood by those they are aimed at but in many cases what may have started out as a good argument becomes lost in obscurity With the coming of tri service management the future prospects of communication look bleak but the quality of communication will be more important than ever ensuring that unnecessary misunderstanding does not lead to unnecessary mistrust

J V Holland
Surgeon Captain (D)
Acting Editor

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Updates

So is it all black?

Recent updates have not surprisingly been dominated by Defence Costs Studies and their implications for the RNMS. However it is important to retain perspective and to be aware of some major effects on the Navy. In this context I would like to highlight two problems which are likely to continue for the foreseeable future.

The first is the oft reported and regrettably true fact that the post cold war world finds the Royal Navy facing a relatively unprecedented scale of peacetime operational commitments. This is affecting the Navy's ability to train for and meet other contingencies and is placing a considerable strain on individuals and equipment. Serving members who have experienced the turbulence of short notice moves often at great personal and professional inconvenience will testify to this and they will be disappointed but not surprised that no relief can be offered at present. The problem is that whereas before we had the manning flexibility to meet extraneous commitments and still maintain the peacetime training and provision of service requirements today's very tight manning means that there is little spare capacity. The redundancy programme will only serve to exacerbate the problem and, until it is worked through and commitments ease, the strain on individuals will continue.

Added to this and to some extent inextricably linked with it is the strain on Naval resources. Quite properly the Defence Costs Studies were entitled Front Line First to indicate the emphasis that was to be placed on finding savings to preserve front line capabilities. The only option at present is to bear down on all other defence costs to produce the savings necessary to meet the gap between the government resourcing and the cost of maintaining the position of the Navy on the international stage. You may be assured that these problems have been recognised in Admiralty Board papers and discussions with Ministers but unfortunately recognition does not bring immediate resolution and it is likely that the relentless search for savings will continue for some time to come.

So it is all black? The answer must be a firm no. I believe that the RNMS is in the vanguard of the wider RN in achieving the resource-commitments match. It has been a painful and sad process but one which we have to put behind us in order to properly address the future.

For that I see three goals.

First provision of a worthwhile and well rewarded career without the current differences in terms of service between the Medical Services which compares favourably with our NHS colleagues and in addition recognises the constraints of military service.

Secondly establishment of an effective long term HQ organisation for the RNMS correctly positioned in the TLB structure to achieve the fulfilment of our operational capability.

Finally maintenance of the RNMS high standards of achievement training and medical care dedicated to the needs of the Royal Navy.

The first objective, which is so vital to the achievement of the other two has the full support of the Second Sea Lord and his colleagues on the Principal Personnel Officers' Committee and I see it as the number one short term aim I will report progress in future editions

A Craig
Surgeon Rear Admiral
Medical Director General (Naval)

A new look for QARNNS

Despite a flurry of bureaucratic delays QARNNS officers took RN titles and badges of rank on 3 September 1995 We all felt rather sad at losing our unique badges of rank the design of which Queen Alexandra had influenced but it had become unacceptable when QARNNS officers were not recognised by personnel in the RN yet alone those from other services With much assistance and co operation from the staff of the Defence Clothing and Textile Agency PNO (now Captain) Massey's ideas have been creatively developed into our new badges during a project lasting 2½ years

A Mess Dinner was held in RNH Haslar on 1 September 1995 when 55 officers dined out in the old badges and mess dress for the last time the occasion was also used to say farewell to those personnel leaving on redundancy The evening was most enjoyable again tinged with sadness but with a firm commitment to look to the future taking with us the best of the past

Since the last edition of the Journal this long hot summer has been one of many reunions and commemorative occasions QARNNS veterans of conflicts from WWII and later have met or represented QARNNS during various occasions and many memories and memorabilia have been retrieved and placed in the QARNNS Museum at RNH Haslar

It was particularly appropriate this year that student nurses from QARNNS and QARANC, training at the Portsmouth University School of Health Studies were selected to escort the Lamp at The Florence Nightingale Commemoration Service in Westminster Abbey when the three Matrons in Chief escort the Nurses Roll of Honour compiled by the British Commonwealth Nurses War Memorial Fund

At the AGM of the QARNNS Officers Association in June 35 veterans from WWII managed to attend a formidable group of ladies who had nursed in most unusual places often under the most appalling conditions and their demeanour reminded those of us still serving in

no uncertain terms what being a QARNNS officer entails Again it was perhaps appropriate that we all had a struggle to reach the Victory Services Club for the meeting this time it wasn't the Axis Powers that were the problem — it was a march for Gay and Lesbian Rights!

Already the first nursing officer to leave the Service on redundancy has left to commence her pre-release vocational training and from now until the summer of next year the remainder will be released at their preferred time This period of turmoil will not be easy to manage as the allocating and appointing staffs struggle to maintain a smooth flow of nurses to maintain patient care provision Personnel from the QARANC and PMRAFNS will begin to be

seen in both RNH Haslar and the MDHU at Derriford from September and much amusement is being generated by the books of Single Service jargon being circulated to hopefully assist in understanding To give a repeatable example apparently in the Army officers are called Rodneys quite a change from RN slang we all wonder how the other Services will get on with terminology like heads' etc!

Officers and ratings from QARNNS won all sections of the Inter Nursing Services Tennis Tournament for the fourth year running this year and although it remains difficult for staff to arrange time for practice there continues to be interest in many different sports and adventurous training

The long period of continuous change looks set for some time to come and it is appreciated that for some personnel disruption both personal and professional is occurring We are trying to minimise the negative aspects of these changes by providing accurate and speedy information and Divisional support for all personnel During these difficult times it is important that as well as caring for our patients we have time to consider and care for each other and ourselves

C M Taylor RRC QHNS
Captain QARNNS
Matron in Chief

Towards the Defence Dental Agency

Summertime and the livin run t easy! The good news is that the proposed Defence Dental Care Agency has already achieved 25% savings by officially becoming the Defence Dental Agency (DDA)! Progress towards the launch of this new slimline entity continues apace

Your correspondent is currently struggling to disentangle himself from a web of Management Speak and convert back to MOD Speak whilst dealing with the formulation of such unfamiliar documents as the Framework Document various Strategy Documents the Corporate and the Business Plans To get right the content and structure of all of these is essential to the future smooth running and effectiveness of the DDA and of the RNDS within the new Agency

At the same time two way Service Level Agreements (SLA) are in the process of being drafted in order to define the level and standard of dental care which will be delivered to the DDA s customers and the support and infra structure which they (principally the TLB Holders) will provide the DDA in return

The timetable for Agency Launch and implementation of its Headquarters and management structures assuming Ministerial approval for all the plans and strategies is as follows

2 October 1995 Agency Launch — The Chief Executive and three single Service Directors form up at Lacon House as the Core HQ Lacon House will be the interim solution until a permanent DDA HQ can be identified and established Each single Service Director will head a functional Division within the HQ These

will be **Clinical Services, Planning and Finance, and Personnel and Training** DNDS has been designated Director of Personnel and Training and will wear this hat in addition to his single Service duties

1 January 1996 31 March 1996 Remaining HQ Staff including ADNDS and RNDS Senior Rate, form up at DDA HQ

1 April 1996 Current work to identify the costs of provision of Primary Dental Care culminates and DDA 'Full Cost Budget' goes live. The Secondary Care Agency (SCA) also launches on this date. All Consultants in Oral and Maxillo-Facial Surgery (O&MFS) will become part of the SCA. Dental rating support for O&MFS will be provided by the DDA in accordance with Service Level Agreements.

1 April 1996-31 March 1997 The DDA Regional Management Structure will be put in place with Principal Dental Officers (PDO) mainly of Captain (or equivalent) rank exercising both clinical and management audit over between 16 to 20 Service dental clinics within their geographical areas. These responsibilities may cross single Service boundaries but in the predominantly Dark Blue areas of the South and South West PDOs will be RNDS personnel.

31 March 1997 By this date all the key targets of DDA implementation should have been met and the full management structure will be up and running.

The aim of the new Agency has been the subject of much discussion. DNDS was anxious that effectiveness should not be measured by the number of procedures performed. This he believed, would be digging for ourselves the very same pit out of which the General Dental Services of the NHS are currently trying to dig themselves.

The Aim of the DDA is now agreed as to contribute to the operational effectiveness by achieving and maintaining in the most cost-effective way the dental fitness of the Armed Forces in war operational situations other than war and peace. RNDS personnel will recognise that there is little change from our current aims and objectives. It will be, however, our accountability for achieving the targets set upon us which will attract more intense scrutiny in the future.

I very much hope that in addition to the Question and Answer sessions with myself which most RNDS personnel will have attended recently, the above will have clarified the way ahead for all of us. In October I will have been dragged kicking and screaming from my very pleasant office here in Victory Building back to the somewhat less salubrious surroundings of Lacon House. My next dispatch from the front will be sent by London pigeon rather than E-Mail!

E J Grant
Surgeon Commodore (D)
Director Naval Dental Services

J roy nav med Serv 1995 81 101 107

Debating point

Immersion fatalities: Hazardous responses and dangerous discrepancies

M J Tipton

Based on a paper presented at the SINTEF UNIMED 'Thermal Physiology and Survival Clothing' meeting held in Aberdeen in 1993

Abstract

In this paper the following question is addressed Why given the plethora of standards specifications and guidelines for immersion protective equipment are lives still being lost at sea and fatal accident enquiries questioning the quality of such equipment

In attempting to answer this question consideration is given to the extent to which both the possible prevailing environmental conditions and the physiological responses they evoke are recognised in the design selection and evaluation of immersion protective equipment The hazardous responses associated with immersion in cold water are briefly reviewed and the value and relevance of some of the existing tests of immersion protective clothing are considered

It is concluded that 1 when standards policies and tests for the selection and use of immersion protective clothing are being formulated consideration should be given to all of the hazardous responses associated with immersion ii it should be recognised that the performance of immersion protective equipment during an accident may be significantly inferior to that predicted by routine testing for certification

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The area of survival in the sea is truly multi disciplinary bringing together experts from a wide variety of fields including policy making manufacturing industry and science In *Figure 1* the consequences of both good and poor lines of communication between scientists policy makers regulatory bodies and manufacturers of immersion protective equipment are presented

Doctor Tipton is a Reader at the Robens Institute University of Surrey based at the Institute of Naval Medicine

It can be seen that it is the standards specifications regulations and guidelines of the regulatory bodies which will determine the level of performance of immersion protective equipment Manufacturers are unlikely to produce the best equipment they can *per se* but will produce equipment sufficient to comply with the relevant standards This is understandable given the competitive nature of the protective equipment market and the costs associated with producing unnecessarily advanced products

Thus the quality of the standards used to evaluate protective equipment becomes a critical factor In *Figure 1* it is suggested that such standards can be significantly weakened if they do not address all the hazards against which an immersion victim should be protected or if they fail to evaluate or predict performance in the full range of potential environmental conditions It is when either or both of these weaknesses exist within a standard that protective equipment which complies with that standard can perform surprisingly poorly during an emergency

It is worth noting that the alternative to surprisingly poor performance should not be surprisingly good performance as this also suggests a degree of inaccuracy in the evaluation of the protective equipment The best that can be achieved by the evaluation of such equipment is that an accurate indication is obtained of its performance during an emergency This will then allow those with the responsibility for policy making or purchasing such equipment to make a more informed choice

An important first step in producing a standard is therefore to identify the hazardous responses associated with immersion in cold water In the following section these responses are briefly reviewed

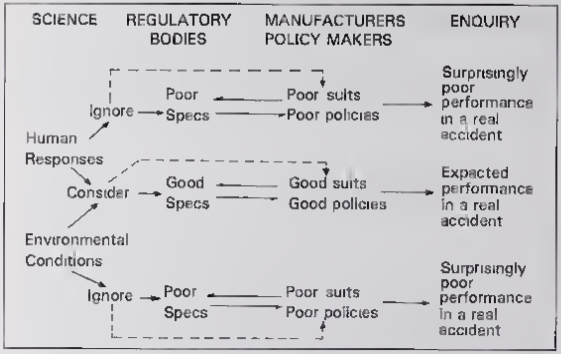

Figure 1 Relationship between the groups involved in survival in the sea
Note Specs = specifications regulations standards and guidelines

HAZARDOUS PHYSIOLOGICAL RESPONSES TO IMMERSION IN COLD WATER

The design of immersion suits their performance specifications the tests and standards used to evaluate them and policies for their use are still primarily influenced by the belief that the major threat is hypothermia or a fall in core temperature Thus the role of immersion suits is generally thought to be to delay the onset of hypothermia

Despite the vast amount of attention which has been given to hypothermia and the efforts that have been made to protect against it experimental evidence suggests that other responses can present a significant threat to life Golden and Hervey have described four phases of immersion associated with particular risks These are

1 Initial immersion

There is now a large body of anecdotal statistical[1,2] and experimental evidence[3,4] to suggest that the initial responses to immersion in cold water are potentially extremely dangerous and are responsible for the majority of the annual open water immersion deaths in the UK

These responses given the generic term cold shock are thought to be initiated by a sudden fall in skin temperature they peak within the first 30 seconds of immersion and adapt over the next 2 3 minutes The responses include tachycardia hypertension and an inspiratory gasp which decreases breath holding capability (*Figure 2*) Most individuals hyperventilate and tetany has been reported in the laboratory [3] The percentage of subjects able to achieve any given average maximum breath hold time when submerged wearing immersion protective clothing is presented in *Figure 3*

Cold shock constitutes a serious threat to immersion victims particularly those who need to consciously suppress their breathing following immersion in choppy water or submersion in a sinking craft Maximum breath hold times of less than one second have been reported following immersion of naked individuals in cold water[4] and an average maximum breath-hold time of 25 seconds has been reported for 12 subjects submerged in water at 5° and 10°C wearing specialist protective clothing It is the shortfall between this time and that thought necessary to make an underwater escape from a ditched and inverted helicopter which provides the rationale for some form of emergency breathing aid to

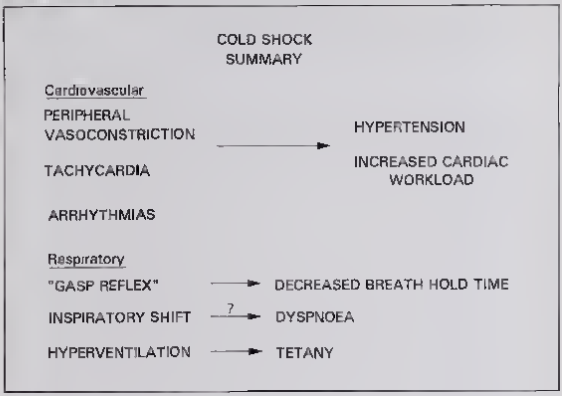

Figure 2 Summary of the initial responses to immersion in cold water

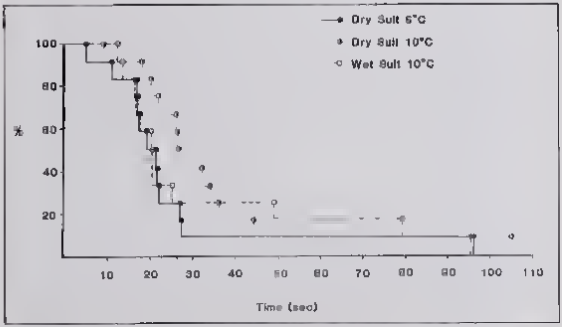

Figure 3 The percentage of subjects able to achieve any given maximum breath hold time when wearing dry or wet suits in water at 5° and 10°C (n = 12)

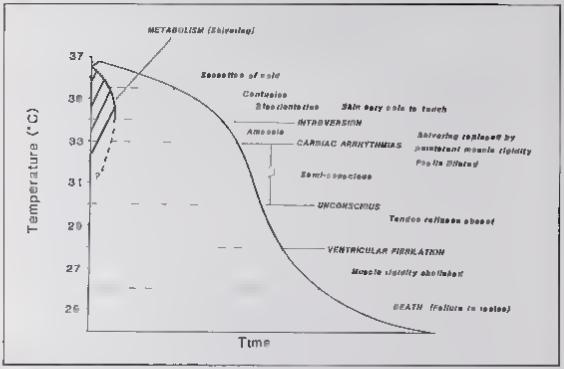

Figure 4 The signs and symptoms of hypothermia (based on Golden[34])

be added to the list of equipment provided for helicopter passengers and crew

ii Short term immersion

The main problem associated with immersion lasting 3 30 minutes is keeping the airways clear of the water even good swimmers are often unable to swim for more than a minute or two in very cold water[1 17] This may be due to the respiratory and cardiovascular responses already discussed and/or peripheral cooling which can impair neuromuscular function

iii Long term immersion

The signs and symptoms of hypothermia are presented in *Figure 4* [34] In general after about 30 minutes of immersion hypothermia can for the first time become a problem The threat to life may arise from hypothermia directly that is the body temperature falls to untenable levels or for the victim without an effective lifejacket, from drowning after incapacitation and unconsciousness arising from less severe hypothermia[17]

iv Post immersion

Death may occur during or following rescue On average about 20% of immersion fatalities occur just prior during or just following rescue (cf cream rescue collapse[4 15]) A number of these deaths have been attributed to the 'after-drop' of the body core temperature observed following removal from cold water [16] However Golden and Hervey[4] found no after drop in the temperature of the central venous blood of pigs following cold water immersion They suggested that a sudden fall in the temperature of the heart due to the return of a cold bolus of blood from the cooled periphery was unlikely to constitute the mechanism of post immersion death especially in individuals whose core temperature was high enough for them to be conscious on rescue

As an alternative hypothesis Golden and Hervey have suggested that in the hypothermic individual whose regulatory responses have been compromised the loss of the hydrostatic assistance to circulation (up to 30% of cardiac output) on removal from the water may lead the collapse of arterial pressure and as a

consequence cerebral ischaemia coronary insufficiency and myocardial hypoxia The problem is thought to be compounded if the victim is lifted vertically from the water as in this situation venous pooling under the influence of gravity will further reduce cardiac output Lifting individuals from the water in a horizontal attitude would in theory therefore be beneficial

It is concluded that when standards specifications and guidelines for immersion protective equipment and survival policies are being formulated consideration should be given to all of the hazardous responses associated with immersion and not just those which result in hypothermia Currently this does not appear to be the case A review of standards specifications and guidance notes for immersion protective clothing[37] has revealed that none including those for helicopter passengers and crew has a specific performance objective or type-test to establish the level of protection provided against the initial responses to immersion in cold water

Acceptance of the threat presented by cold shock could have profound implications for the estimation of survival time the policies formulated for the use of immersion protective equipment and the type of equipment recommended For example even in situations where rescue times are thought to be very short knowledge that the cold shock response is at its greatest during the first 30 seconds of immersion would necessitate the provision of an appropriate immersion suit and lifejacket for those at risk of even the shortest periods of immersion Furthermore the criteria for appropriate suits may alter as the cold shock response is initiated by sudden falls in skin temperature suits which do not incorporate watertight wrist and neck seals are likely to possess an inherent disadvantage when it comes to protecting against this response Currently many wet suits and constant wear work suits do not incorporate such seals

ENVIRONMENTAL CONDITIONS DURING AN ACCIDENT COMPARED TO THOSE PRODUCED DURING TESTING

It is clearly critical that the performance objectives and tests contained within standards give an accurate indication of the protection which equipment might provide during an emergency To do this tests must either recreate the tasks which may have to be undertaken and the environmental conditions which may exist during an accident or provide a reliable and valid way of predicting performance in such situations If they do not then there is a danger that approved suits will be inappropriate or not as appropriate as they might be

REALISTIC TESTING?

The innocuous nature of many laboratory based tests of immersion suits has been recognised for some time Steinman *et al*[8] have noted the effect of sea state on the rate of cooling of immersed clothed subjects An examination of climatic records for the North Sea reveals that the average wave height falls below the 4 6 metres of sea state 6 during only two months of the year [9] This contrasts with the 30cm waves achieved during most laboratory based cold water investigations The less severe conditions within the laboratory result in slower rates of cooling due to less convective cooling less flushing of water and most important of all lower levels of water leakage

Leakage of water into an uninsulated dry suit and undergarment wetting either during underwater escape from a submerged aircraft or during surface survival actions will reduce the insulation provided by such clothing assemblies [20 21] Light *et al*[22] reported that during underwater escape dry suit leakage ranged from 46g to 2·83g during 20 minutes surface activity it ranged from 177g to 1399g When the figures for the moisture accumulating in the suits due to perspiration caused by flight conditions were added to those showu above the potential loss of insulation due to dampening within the dry suits tested ranged from 15 to 50%

Clearly the potential exists for laboratory based tests to over estimate the performance of immersion protective equipment This is shown in *Figure 5* where the results of an experiment are presented in which a group of subjects undertook two immersions wearing identical clothing assemblies The only difference between the two immersions was that in immersion B 15cm waves periodic surface spraying a 6 knot wind and an initial 15 second period of submersion were introduced This relatively mild increase in the severity of the conditions employed during the test resulted in a reduction of about 30% in the estimated survival time provided by the clothing during test B In both tests the brand new well fitting uninsulated dry suit which was worn was an approved suit which had allowed less than 200g of water ingress during the leakage tests required by various standards The average leakage

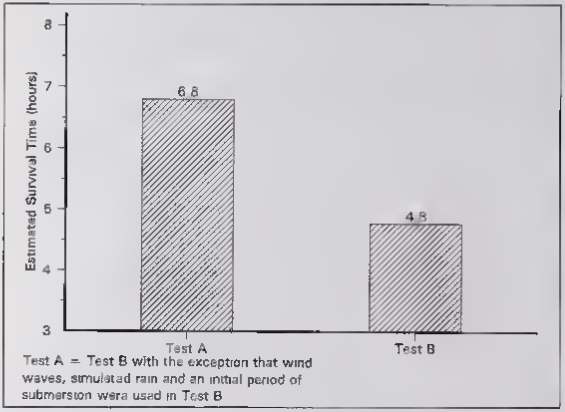

Figure 5 Average estimated survival time for subjects wearing a standard uninsulated immersion dry suit in two sets of conditions in water at 4°C (n=12)

recorded during the first 20 minutes of Test B in the experiments reported above was 1 144 litres

In addition to the severity of the tests used to evaluate immersion suits other possible sources of discrepancy in the performance of a suit in a test and during an accident include

a The age of the equipment — the equipment used in tests tends to be new whereas that used during an accident may be nearing the end of its useful life and have been repaired many times

b That the tests conducted on a suit e g fire protection water leakage thermal protection tend to be undertaken separately and on different suits In an accident a single suit may have to endure all of these factors and as a consequence serial testing may be more representative

c That normally different pieces of protective equipment are worn in combination but these combinations are seldom tested together The best known example of this is lifejackets and immersion suits which are tested separately and then worn in combination — evidence suggests that the performance seen in isolation can be quite different from that seen in combination[23 24] The development of integrated survival systems[25] may help to improve this situation particularly if specific standards are developed for complete systems

d The use of thermal manikins Recent evidence[26] suggests that although immersion thermal manikins provide accurate measurements of external insulation caution must be exercised when using the results from manikins to determine the relative value of immersion suits designed for use by humans This is because manikins give no indication of the effect which variations in regional insulation (by design or as a result of water ingress) will have on deep body temperature

CONCLUSION

If the chances of protective equipment performing surprisingly poorly during an emergency are to be reduced both the

communication between the relevant expert groups and the predictive nature of the tests used to evaluate such equipment must be improved To achieve the latter performance objectives within standards could be made more rigorous and the tests more realistic Alternatively the tests could stay as they are and correction factors based on experimental findings and mathematical models could be employed to adjust the performance observed in tests to that likely to be encountered following an accident The end result of improving the predictive nature of evaluative tests does not have to be more expensive protective equipment What it should produce is an accurate estimation of performance during an emergency around which a survival policy can be based with confidence rather than ignorance

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Operational

Maritime contingency operations in an uncertain world; Deter; Coerce; Intervene

J K C Pearce

INTRODUCTION

It is entirely reasonable that we should regard the so called post Cold War era as a new historical chapter The pattern of confrontation between two competing ideologies and two superpower military alliances with their distinct and unequivocal diplomatic lines has been superseded by a more subtle set of relationships and more immediate military threats have given way to an environment in which the challenges to security are less easy to predict but yet are evident all aroond us Ethnic strains religions differences and territorial disputes over forgotten boundaries have made conventional war all too familiar a part of today s scene whether it be in the Gulf Bosnia or Azerbaijan

The fact that political considerations are more complex and threats more diffuse places a clear premium on forces which are mobile — so that they can be brought to bear upon distant crises — and which are flexible for complex diplomatic considerations must be matched by delicate and precise military responses Government will therefore wish to dictate the pace and direction of events and conscious of international opinion they will want to achieve their precise aim at any given juncture

INFLUENCING THE COURSE OF EVENTS

The previous three decades constituted an era entirely appropriate to the retention of massive and static ground forces which were tied to the defence of territory the UK s rationale for its continental ground force deployment was the immediate defence of the nation But new patterns of international tension imply a requirement to project power perhaps over great distances and it is suggested that it is maritime forces that most readily embody the qualities of mobility and flexibility which are now so appropriate Not only does a maritime force s inherent mobility confer a genuine reactive capability but its other qualities — particularly its logistical self-sufficiency and independence of local support — renders it politically a very attractive option when considering how best to influence and determine the course of events Furthermore a chain of events which deteriorates into crisis may require military forces in turn to exercise deterrence, coercion and finally intervention maritime forces can play a key role in contributing to each of these prime requirements

DETERRENCE

Deterrence remains a core military function and its fundamental aim is to prevent conflict Cold War deterrence was in the main the preserve of strategic nuclear forces but it is the concept of conventional deterrence which is perhaps more relevant to many aspects of the current environment

Well equipped and trained maritime forces are able to exercise a genuine deterrent effect within a region if they have been deployed by a nation which has a record of successful intervention their deterrent effect is increased They represent a commitment to the stability which is so necessary for peacetime trading and their freedom of movement into and within a theatre indicates that they can be reinforced by greater capability if necessary This deterrent role is also highly relevant to the security of sea lanes of communication in a high intensity conflict when control of the sea is a vital consideration it is necessary for the deployment of heavy ground forces and for the support of any substantial allied force in theatre

Maritime forces capacity for self defence and their logistic independence fit them well for the task of being projected forward into an area of

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tension Furthermore if the situation deteriorates markedly so that it exceeds the capacity of in theatre forces to influence the course of events the ease with which maritime forces can be extracted becomes a highly relevant political and diplomatic consideration the alternative might be embroilment

COERCION

Armed coercion is the use of force which acts directly on the decision making process of the opponent leadership in order to compel him to take a course of action or to dissuade him from taking one Although various levels of coercion can be applied throughout the course of a crisis the term is used here specifically as an interim step between deterrence and armed conflict

The ability of a naval force to be reinforced while avoiding commitment to the ground the infringement of territory and dependence upon local support assists it in making a smooth transition from deterrence to a more coercive posture Its ability to demonstrate a more aggressive form of poise by moving closer to territorial waters for example also enables it to act as a symbol of increasing resolve and determination This process might involve a steadily increasing control of the sea and its lines of communication and if necessary more overt signals that force — organic air power amphibious forces or precision guided weapons — could be brought to bear upon the land mass

It should be noted that the transition from deterrence to coercion (and indeed to intervention) can be achieved by issuing revised Rules of Engagement (ROE) to maritime units Well framed ROE represent a tight linkage between political will and military action which is able to maintain a comprehensive area picture and impose its will over a large area The ability of a maritime force — whether it is a single frigate or a task group — to receive and apply ROE within a matter of minutes is a factor of its full suite of capabilities which includes sophisticated long range communications command and intelligence facilities surveillance systems electronic warfare equipment organic aircraft and a range of offensive weapons with which to project power A maritime force therefore represents the distant and precise application of political will

INTERVENTION

Where the process of deterrence and coercion do not achieve the desired foreign policy aims armed intervention may be required Again naval forces can contribute considerable leverage or power and, in this context our amphibious capability has never been more relevant to the strategic and operational environment It offers a combination of strategic reach logistic independence and operational mobility Amphibious forces can sail early and with orchestrated publicity to demonstrate will and capability or they can be despatched without demonstration if political understatement is required They can take passage through international waters without infringement of territorial boundaries They can poise at sea (and or land on a potentially hostile coast at a time and place of the commander's choice and independent of shore infrastructure Ashore they can conduct independent operations or create the preconditions for the landing or withdrawal of heavier forces

An Amphibious Task Force (ATF) comprises three essential elements the escorts the amphibious ships and the landing force Current UK amphibious plans envisage one third of the landing force being carried in specialist amphibious ships (the LPDs LSLs and LPH equivalents) with the remainder being carried in STUFT This structure enables manoeuvre from the sea utilising sea control particularly in littoral areas to mass force rapidly and to generate high intensity precise offensive power at the time and location of our choosing The ATF has the ability to manoeuvre at sea over 300 miles in 24 hours and therefore forces an enemy to greater dispersal and hence slower concentration until he has identified the main landings

The specialist amphibious ships provide four key features command and control facilities sea lift helicopter lift facilities and ship to shore movement The new LPH will provide a much needed component of our maritime power projection capability in that it enables manoeuvre warfare to be conducted in the third dimension Helicopters play a crucial role in providing vertical envelopment in order to generate depth to the beachhead and widening the deployment options for the assaulting force However the helicopters alone will not be sufficient to move the landing force ashore since they are simply not sufficient to lift all the heavy battle winning equipments These vital vehicles and equipments particularly the all terrain BV206 RAPIER AD systems and engineer plant are projected by surface assault initially by landing craft and subsequently by the mexefloats integral to the

ATF The LPD plays a key role in this respect Its dock provides the vital LCUs which uniquely are capable of carrying all heavy equipments and up to a company of assaulting marines in severe sea states and weather conditions The LPDs will also provide the ATF s fundamental require ments of secure communications joint planning facilities and the synthesized intelligence picture in order to synchronise and conduct this most complex of military operations No other platform is capable of providing the size and scope of C2 facilities required except the CVS and then only with significant enhancement modification and severe degradation of its primary area defence role

Aircraft carriers represent another key capability with which a naval force can intervene by the projection of power Carriers can provide a whole range of capabilities ranging from C2 to direct support of operations ashore to ASW and air defence for an amphibious group they can also help to protect the sea lines of communication on the way to an intervention area They complement shorebased air indeed in three of the four high intensity conflicts in which the UK has been involved (Korea Suez and the Falklands) the vast majority of all UK air support was carrier based The deployment and sustaining of aircraft in a theatre of operations independent of host nation support offers a considerable range of options to government and is an excellent example of significant intervention capability

Plans already in hand will further enhance the carriers intervention capability By 1996 the Sea Harrier FRS2 aircraft will be in service and equipped with the AMRAAM missile it will be the most potent fighter aircraft in the UK s inventory Its capability to carry out 24 hour engagements beyond visual range will confer air superiority over the CVS group and up to 300 miles inland and it will force most opponents into adopting a defensive air combat stance Embarked AEW Seaking aircraft will assist the process of battlespace management and picture compilation By 1996 it is also intended to deploy RAF GR7 ground attack aircraft onboard the CVS thus enabling the sustainable deployment of an advanced air to surface and air to air combat capability Sustainable in this context includes the CVS s capability to assess intelligence collate targeting data direct operations and provide embarked airframes with maintenance spares fuel and ammunition support

And lastly the nuclear attack submarines the SSNs are a highly capable platform which has high relevance throughout the course of a crisis Able to sustain high speed — they can cover 600 nautical miles per day with no need to refuel — they may be the first on the scene where they are then available for SF insertion early denial of the sea to an enemy or to procure critical intelligence They can furthermore remain at sea operating overtly or covertly and independently of outside support for up to 90 days When the SSN is equipped with Submarine Launched Cruise Missiles (SLCM) it is a platform which, partly because of the menacing uncertainty about its true position can have a significant deterrent and coercive effect in the early stage of crisis If the situation deteriorates to war fighting, the SSN/SLCM combination combines a surgical degree of accuracy with none of the risk of aircrew losses which is associated with fixed wing operations

One final point which should be made about the utility of a maritime task force is that it is ideally structured and equipped for joint operations almost any operation today is of a joint nature and units which are able to contribute to the air and sea battle will have obvious merits An amphibious force has a clear joint capability since it can achieve local sea control establish a bridgehead in order to create the conditions for the landing of heavier forces and then provide air support for friendly forces ashore

In outlining the three core capabilities of amphibious forces carriers and SSNs it certainly is not implied that destroyers and frigates mine-countermeasure vessels and afloat support ships do not play key roles They do of course DD/FFs are essential assets in any maritime conflict and play a key role in the general sea denial task upon which all reinforcement and amphibious operations depend The Gulf conflict demonstrated the critical importance of a highly capable MCM force and the RN s RFAs played a key role in both the Falklands campaign where they helped sustain the Task Force 8000 miles from home and in the Gulf conflict

THE MANAGEMENT OF RISK

In examining how a naval force can be deployed forward in order to contribute to deterrence coercion and war fighting we must clearly consider the risks How can maritime forces manage risk? The first point that should be made is that highly capable maritime units offer high

rewards in return for their deployment and having been placed in harm's way operational risk can be managed at both the task group and unit level. A task group commander can manage risk by considering the optimum route to the theatre of operations and then selecting the time at which he wishes to make his entry. Having determined the nature of the threat and the most likely threat axis he can deploy his units so as to fight his defences and protect his key units. A unit commander can also manage and minimise his risk, while achieving his assigned objective. He can increase the watchfulness of his command team, order the ship's comprehensive array of hard and soft-kill defensive weapon systems to the highest state of readiness and ensure that the ship's extensive range of damage control measures are available.

It is suggested, therefore, that maritime units have as much, perhaps more, flexibility than any other platform in managing operational risk. Of course, some ships may suffer hits, but during the Falklands conflict a large number of RN escorts demonstrated that a surface ship can absorb considerable punishment, survive, recover and then continue contributing to the task. In this a ship compares very favourably with platforms such as aircraft or armoured vehicles. The point is that ships are designed, procured, equipped and trained to be exposed to operational risk and to manage the consequences. Indeed, they are among the most capable all round risk managers in a nation's defence inventory.

SUMMARY

To draw these points together, naval forces have a high degree of relevance to the current strategic environment. Their inherent mobility and their independence once in theatre mark them out as the most genuinely reactive forces which a nation is likely to possess, and the fact that their early commitment is matched by their subsequent ease of withdrawal makes them an obvious first choice when considering how to respond to a crisis.

Their endurance and flexibility of tasking once in theatre gives them particular relevance to deterrent and coercive roles; forces that can be configured for a wide range of tasks at short notice are particularly useful in these respects, and the responsiveness of maritime forces to graduated ROE is also a key consideration. Here the attention of naval forces is that they possess a fine structure of responses ranging from presence, through intelligence gathering, to exclusion/embargo operations and to offensive actions at a distance. As events deteriorate, naval forces can project considerable power if a situation deteriorates to the point where heavy forces are required; naval forces are the mechanism which delivers and then supports them in theatre.

In summary, the new strategic environment is likely to prove a most fertile ground for maritime influence and intervention, and for well equipped, trained and directed naval forces.

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Clinical management

Drowning and Near Drowning

R W J Haddon

(Originally published in A Handbook of Immediate Care *and reproduced here with kind permission of the Editor)*

THE IMPORTANCE OF DROWNING

Each year drowning causes more than 500 deaths in the UK more than 8000 in the USA [1] and an estimated 140 to 150 000 worldwide [2] In the United Kingdom it is the third most common cause of fatal childhood accidents,[3] after road traffic accidents and burns with an average of 72 child deaths per year due to drowning occurring between 1982 and 1992 [4] Drowning is no less important in adults being the second commonest cause of accidental death of under 45 year olds in the United Kingdom Figures for near drowning are difficult to obtain but conservative estimates give an incidence double that of drowning In the absence of significant advances in prevention death by drowning is likely to become more common with the increase in the number of domestic swimming pools growing numbers of water sport enthusiasts and of elderly people taking part in water sports [5]

The importance of appropriate immediate care of the immersion victim is emphasised by the available figures for successful resuscitation attempts in such cases Chances of survival are extremely good if treatment is begun before the onset of cardiac arrest [5] surveys giving survival rates of between 80 and 100% — the majority indicating the upper end of this range The chance of full recovery of an immersion victim depends to a great extent on the speed and quality of the resuscitation and treatment that they receive at the scene of the incident Indeed on scene resuscitation is second only to immersion time in determining survival In the words of one authority writing on the prevention of drowning deaths The future lies very much at the accident site.. in relief of hypoxia as soon as the victim is removed from the water [6]

CONTRIBUTING FACTORS

The elderly the very young and water sport enthusiasts are at the greatest risk of drowning [7] for obvious reasons The very young are less likely to be swimmers The elderly, are less likely to be strong swimmers are more susceptible to the physiological stresses of immersion and are more likely to suffer sudden incapacitation from illness Water sporters are obviously the group most likely to be immersed Drowning is three times as common in men as in women [5] partly reflecting the relative numbers taking part in water sports although other factors including difference in alcohol intake may also contribute to the male predominance in drowning

Many cases of drowning may be regarded as secondary the primary event being the condition or factor preventing the victim from keeping their airway above the water It is perhaps inappropriate to regard inability to swim as a primary condition but appropriate to regard hypothermia and trauma in this way It is important to be aware of the factors which may be involved in drowning cases as they need to be considered when making decisions about treatment

Hypothermia and the more immediate effects of immersion in cold water are particularly significant in drowning and near drowning incidents in UK waters The water temperature around the shores of the UK varies between 5 and 16°C, so even on the warmest day unprotected immersion may result in hypothermia In immersion incidents the

At the time of writing Surgeon Lieutenant Commander Haddon was appointed to HMS *Seahawk*

temperature of the water is far more important than whether the water is salt or fresh Indeed the type of water makes no difference to the immediate treatment of immersion victims and very little difference at later stages [1 3 5]

Alcohol is a factor in a significant number of drownings especially of young adult males where it may play a part in up to 50% of cases Drugs may also contribute to some cases Alcohol and water sports do not mix [4] but it is easier to say this than to convince water sporters

The danger of hyperventilating before swimming under water is not realised by many and contributes a number of cases to the drowning statistics [7 8] In health breathing is controlled by arterial carbon dioxide levels Hyperventilation lowers the arterial CO_2 saturation while having little or no effect on arterial O_2 saturation As swimming continues the arterial O_2 saturation drops and CO_2 saturation rises If the O_2 level drops enough to cause cerebral hypoxia before the CO_2 level is high enough to stimulate breathing and make the swimmer surface he will lose consciousness underwater and may drown

Inability to swim is an obvious factor but is worth mentioning in that the incidence of drowning in domestic pools is significantly lower in communities with strict pool fencing regulations [9] Improved supervision of areas where water sports take place and training of pool owners in basic CPR techniques would make a worthwhile contribution to reducing the number of drowning deaths [4 9] Overestimation of swimming ability or failure to take account of the effects of cold water on swimming ability may be a factor in the sad cases where would-be rescuers have drowned while trying to save others

Pre-existing disease may be a cause of drowning where it results in sudden loss of consciousness the obvious examples being epilepsy cerebrovascular and coronary disease and hypoglycaemia Overwhelming toxic or allergic reaction should also be considered especially where the subject may have come into contact with poisonous marine life Primary muscle disorders may prevent an immersion victim from keeping himself afloat but such cases are likely to be very rare [3] Drowning has been used in both murder and child abuse [7 8] but it is to be hoped that these are rare also Sadly a number of drownings occur due to lack of parental awareness of the risks presented to toddlers by baths buckets and even washing machines [8]

Trauma may be significant in drowning cases particularly in shallow waters where either cerebral or spinal injury may prevent the victim from keeping himself afloat

THE CONSEQUENCES OF IMMERSION

Entry into very cold water may cause reflex asystole or ventricular fibrillation especially in older people [3] In the absence of a cardiac arrhythmia entry into cold water causes an initial gasp reaction followed by involuntary hyperventilation [3 11] This may be sufficiently powerful or prolonged to lead to tetany Inhalation of water may occur at this stage or the subject may gain control of his breathing Unless the water is above 30°C the body temperature of the subject will drop at a rate depending on his degree of insulation (from clothing and body fat) the temperature of the water the energy expended in swimming (which may double or treble the rate of heat loss) recent alcohol intake and a number of other factors If cold water is swallowed during attempts to stay afloat this will also speed the drop in core temperature As this drops below 35°C disorientation and confusion occurs Even very fit well trained swimmers have been shown to be unable to swim for long periods in very cold water and in trials have been observed making strange dog paddle motions and with uncoordinated breathing after a period of immersion [3 10] If the swimmer remains buoyant for long enough in cold water unconsciousness will occur at a core temperature between 30 and 33°C at which point the airway will slip below the water

When inhalation of water occurs it can cause intense glottic spasm and cardiac arrest may occur at this point This may account for a number of drowning victims (up to 10%)[3] who have no evidence of inhalation of water at post mortem examination sometimes referred to as dry drowning Others of these may have suffered cardiac arrest on entering the water as mentioned above In the absence of glottic spasm attempts to keep the airway clear lead to swallowing of large amounts of water

Aspiration of water whether salt or fresh leads to pulmonary oedema [4] which combined with ventilation perfusion mismatch leads to hypoxia If the water is heavily contaminated with particulate matter this may contribute blockage of smaller airways to the other problems of the victim however this has not been found to cause problems with ventilation

during resuscitation [5] The amount of water aspirated depends on active respiration passive filling of the lungs does not occur [8] In one study aspiration of less than 22ml per kg body weight occurred in 85% of cases this being the level above which electrolyte changes of significance may occur [8] These changes are rarely seen by the time successful resuscitation has been achieved

Hypoxia occurs early in the drowning process in turn reducing the victim s ability to help himself Hypoxaemia occurs in all cases of aspiration, as does acidosis Once aspiration has occurred there is a fairly rapid progression of events with vomiting and inhalation of stomach contents frequently occurring as a terminal event [1 3 5]

Hypovolaemia also occurs as a result of immersion especially if prolonged and if the water is cold Cold induced peripheral vasoconstriction hydrostatic pressure from the surrounding water and the direct effect of cold on the kidney all produce diuresis This is compounded by shift of fluid from the intravascular compartment to the interstitial and intracellular compartments The end result of all these effects is that the drowning victim often has hypotension as well as hypothermia hypoxia and acidosis

IMMEDIATE CARE

In all rescues the physical safety of the rescuer should be considered If the victim is in cold water this may incapacitate even the fittest rescuer The minimal precaution to take in these circumstances would be for the rescuer to be attached to a line in order that he could be pulled in by others if he were to get into difficulties Drowning deaths are not uncommon in those who jump in to attempt the rescue of others [10]

The prime aim in the immediate care of immersion victims is the treatment of hypoxia and the restoration of cardiovascular stability as early as possible This should be appreciated by all concerned including those involved in transporting the victim to hospital and the receiving staff at the hospital casualty department

The victim should be removed from the water as rapidly as possible In water CPR should not be attempted except by the very small number of professional members of rescue organisations who are both extremely fit and well trained and practised in the procedure In water assessment of the pulse is very difficult and there is the risk of precipitating VF if CPR is attempted on a patient in bradycardia Adequate compression of the chest is very tiring even on land and unlikely to be achieved except in the circumstances above In water EAR is more feasible however the situation where in water EAR is most likely to be of help — in the sea — is also the situation where it is least likely to be possible If the rescuer is a strong swimmer conversant with the technique, and the patient s head can be safely tilted back and to one side it may be appropriate to try if there is likely to be a delay in removing the patient from the water No attempt in water resuscitation should take precedence over removing the patient from the water as quickly as possible

It is essential that rescuers keep the possibility of associated injuries in mind while removing the victim from water ns the possibility of aggravation of neck or back injuries exists with dire consequences If there is the possibility of a neck injury the jaw thrust should be used instead of the head tilt to keep the airway open

Rescuers should also be aware of the danger of sudden collapse and death of immersion victims immediately before during or shortly after rescue [1] This has been reported in 20% of rescues in one series and other surveys have reported similarly high incidence figures Circum rescue collapse is believed to be due to catastrophic drop in arterial blood pressure caused by a combination of factors [1] Victims rescued by vertical lift from water lose hydrostatic assistance to venous return at the same time as re imposition of the effects of gravity tend to increase venous pooling in the legs [2] Hypovolaemia and increased blood viscosity compound the situation When hypothermia is present this will reduce the work capacity of the myocardium and may also impair the baroreceptor reflexes If the victim perceives that they are about to be rescued this may reduce their high catecholamine output and its support of their blood pressure Finally muscular effort by the victim in helping their rescuers may result in opening of muscle vascular beds with a resultant total vascular capacity in excess of the blood volume [6] The resultant fall in blood pressure leads to death either from myocardial ischaemia or fall in cerebral perfusion pressure [1] To minimise the possibility of circum rescue collapse immersion victims should be kept as horizontal as possible during removal from the water [1 7] (although this should not take such priority as to delay removal

significantly) and should remain horizontal during subsequent resuscitation and transport to hospital [1,3] As far as possible rescue should not require any muscular effort on the part of the victim [1]

If the subject is a child simple holding in a head down position may be helpful in allowing passive drainage of water from the lungs [1,3] however in adults this is unlikely to be practical and should not be allowed to delay resuscitation

Use of the abdominal thrust has been advocated but is inadvisable[1] as it is likely to increase the chances of vomiting and subsequent aspiration of stomach contents However it may have a place where a victim has an obstructed airway or where EAR is proving ineffective and suction has proved ineffective in clearing the airway [8]

The airway should be cleared of food and vomitus before commencing EAR — aspiration is very common in drowning victims often as a terminal event Intubation should be considered if rapid return of spontaneous breathing does not occur however it should only be performed if there is suction available and the resuscitator is trained in the technique It is not uncommon for water to regurgitate up the tube and initial attempts at ventilation may have to be accompanied by frequent suction of the bronchial tree [6] Ventilation should be with 100% O_2

Respiratory arrest precedes cardiac arrest in drowning The potential presence of bradycardia and a low volume pulse in immersion victims make it essential to feel for a carotid pulse for at least 60 seconds before deciding to start CPR If no pulse can be felt and there is no ECG available it is appropriate to commence CPR unless the victim is severely hypothermic and it is not feasible to continue resuscitation until the victim can be got to a medical facility or assistance arrives

Early insertion of an NG tube may allow removal of large volumes of swallowed water reducing the risk of aspiration

Intravenous infusion should be commenced where possible — the hypotension associated with near drowning will usually respond to fluid replacement — plasma volume expanders should be used

Treatment of hypothermia is of secondary importance to treatment of hypoxia and restoration of cardiovascular stability [1] Gentle handling of the hypothermic victim should be employed to minimise the risk of precipitating ventricular fibrillation If ventricular fibrillation does occur defibrillation should be employed — although this has been reported to be difficult in hypothermic subjects one authority quotes experience of several cases of successful defibrillation of patients with core temperatures below 30°C

Once resuscitation has been successful or as soon as higher priorities have been taken care of a careful examination of the patient should be made looking for any injuries If the patient is a child which has been immersed in a bucket or bath the possibility of abuse should be borne in mind and signs of this should be looked for

Antibiotics may be considered if the victim has been immersed in contaminated water but this is not an appropriate part of immediate care and indeed may not be required later even in cases with known aspiration of contaminated water Steroids have not been shown to improve the outcome of cases of near drowning and may reduce the victim s ability to fight off infection They should not be used

With resuscitation by trained personnel the immersion victim although apnoeic when found may appear to have recovered completely by the time they reach hospital It is prudent to admit all cases of near drowning as late complications of pulmonary oedema adult respiratory distress syndrome and occasionally cerebral oedema may occur [3] All cases where water aspiration is known to have occurred should be admitted to an ITU and given oxygen until blood gases can be obtained Care should be taken with patients who have been rescued from cold water who deny having been in difficulty, hypothermia causes amnesia and it is very possible that they suffered aspiration of water but do not remember the difficulties they were in [1]

PROGNOSIS

Understandable concern is often felt about the possibility of a well executed rescue and resuscitation of an immersion victim resulting in the restoration of the victim s cardiac output and respiration but leaving him with permanent neurological damage Rapid determination of prognosis is not possible with any degree of certainty in all except the most minor immersion incidents This is because of the large number of factors which influence the outcome of immersion and because the most important factor duration of immersion is often unknown Some factors associated with a poor prognosis and some associated with a good prognosis have been identified

however full recovery has been reported in immersion incidents in the presence of each of the adverse prognostic indicators listed below. In view of this it is best to adopt the rule that every case should receive immediate and aggressive attempts at resuscitation, except where there is no doubt whatsoever that the victim is already dead.[2]

Hypothermia can give some protection against the hypoxia of immersion.[3,4] Several cases have been reported where children have recovered fully after submersion in very cold water for 40 minutes or more. A smaller number of reports of adult cases have indicated that the protective effect is not confined to children. Below a core temperature of 32°C the metabolic oxygen requirements of the brain are reduced. Children are better suited to benefit from this protection as they cool more rapidly, reaching low enough core temperature to gain this protection before the hypoxic damage occurs. The greater rate of cooling in children is because of their greater surface area to mass ratio, and their lower amounts of insulating body fat. It has been suggested that the diving reflex of marine mammals may play a part in helping survival, however there is no evidence to support this view and general consensus is that the reflex, if present at all in humans, is so vestigial as to play no part in survival of immersion.[7,14]

Hypothermia may affect neurological signs especially pupil reactions. It may also produce very low cardiac output which can be hard to detect clinically. Hence in hypothermic immersion victims death should not be diagnosed without the benefit of central temperature recording and an ECG.

Good Prognostic Indicators

young age[2]
submersion for less than 10 minutes
no signs of aspiration[3]
core temperature less than 35°C[9]

Poor Prognostic Indicators

prolonged submersion[2]
delay initiating CPR[8]
asystole on arrival at a medical facility[8,9]
low Glasgow coma scale score[8,9]
fixed dilated pupils[8,9,13]
requirement for resuscitation for over 25 minutes[9]
fits[9]
first spontaneous gasp more than 40 minutes after removal from the water[4]

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Case history

Repeated pseudo-obstruction, mental subnormality — and serious snags

R J Guy and C P G Barker

Summary

Chronic intestinal pseudo-obstruction has certain identifiable causes but many cases remain idiopathic [1] The majority of patients are managed successfully by conservative means with the avoidance of surgery [2] A case is presented where diagnosis was made difficult by autism and which was complicated by perforation of a gastric ulcer Management of pseudo-obstruction is discussed and emphasis placed on an awareness of alternative life threatening pathologies at re presentation

CASE REPORT

A 19 year old autistic male was admitted with a 48 hour history of an acute abdomen and signs of intestinal obstruction He had had four admissions over the previous two years with similar presentations which had proved to be due to pseudo obstruction On his first admission he underwent a negative laparotomy for what was thought clinically and radiologically to be mechanical obstruction but the findings included almost global distension of small and large bowel In association there was a baggy stomach distension of the bladder ureters and renal pelves and the liver was pathologically small being only the size of a fist On the subsequent three occasions rapid resolution occurred with conservative management. A full thickness rectal biopsy demonstrated no neuromuscular abnormalities and apart from a long-standing prescription for chlorpromazine no precipitating cause could be found

On this occasion he failed to settle after 24 hours developing a fever and leucocytosis His condition rapidly deteriorated with progressive respiratory distress secondary to abdominal distension A plain abdominal radiograph revealed free intraperitoneal gas At laparotomy in addition to gut and urinary tract distension perforation of an acute benign lesser curve gastric ulcer was found excised and the defect closed He made a good recovery and was discharged on ranitidine He remains well on follow-up

DISCUSSION

Intestinal pseudo-obstruction is a clinical syndrome characterised by symptoms and signs of intestinal obstruction in the absence of a mechanical cause [3 4] Acute pseudo-obstruction is the most common form and is usually self limiting being related to operative procedures acute illnesses or trauma [5] Chronic intestinal pseudo obstruction is less common Many associated or precipitating factors have been identified these include diseases affecting smooth muscle e g systemic sclerosis and amyloidosis [6] endocrine disorders e g hypothyroidism and diabetes mellitus [8] and neurological disorders e g Parkinson s disease and Chagas disease [9 10] Certain drugs may precipitate the condition including phenothiazines and tricyclic antidepressants [1 3] In a significant number of cases the cause remains unknown [1]

A familial form of pseudo obstruction has been described [4 15] sometimes termed "hereditary hollow visceral myopathy These cases are often associated with urinary tract dilatation[11] and stomach enlargement [1] as in this case An association with hepatic abnormalities has not been reported Any part of the gastrointestinal tract may be involved[1 2] and the distribution may be total patchy or involve only one part [6 7] The relationship with chlorpromazine

Surgeon Lieutenant Commander Guy is currently appointed to the Medical Division CSDE Portsmouth Down Surgeon Commander Barker is a Consultant Surgeon at RNH Haslar

therapy is well documented [12] Chronic intestinal pseudo obstruction has been reported in association with mental retardation [7 8] but not specifically with autism

The diagnosis is dependent on an awareness of the clinical syndrome and the exclusion of a mechanical cause although no investigation is diagnostic [13] Chronic intestinal pseudo-obstruction may be associated with pneumatosis intestinalis [14 15] perforation of such affected gut may lead to a sterile pneumoperitoneum [21 22] confusing diagnosis still further In equivocal circumstances laparotomy may be the only means of obtaining a definite diagnosis Full thickness biopsy of affected gut may then be obtained to identify neuropathic or myopathic abnormalities [19] Manometry motility studies and laboratory evaluation of malabsorption may also aid diagnosis [2 9 20]

There is no medical treatment which can restore normal intestinal motility [20] Cholinergic agents including metoclopramide have been largely ineffective [2 20] Cisapride — a non dopaminergic non cholinergic prokinetic drug — has shown some success [23] and was useful in this case Antibiotics may help some patients by suppressing bacterial overgrowth thereby reducing diarrhoea and steatorrhoea [3] and they have been used successfully in treating pneumoperitoneum associated with pneumatosis intestinalis [22] Parenteral nutrition including home use can improve outcome in these patients [2 20] although enteral feeding and dietary manipulations have been employed with success [2 20]

Management of chronic intestinal pseudo-obstruction and acute exacerbations should be conservative with the avoidance of frequently unsuccessful surgery [1 2] Most exacerbations of pseudo obstruction will settle with conservative decompressive measures and intravenous fluids Surgical intervention may cause diagnostic confusion at subsequent presentation when adhesional obstruction must then also be considered Laparotomy to exclude true perforation in the presence of pneumoperitoneum and pneumatosis may be unavoidable Resection or bypass procedures may have a role in a small number of carefully selected patients [16]

This patient presented as a typical case of chronic intestinal pseudo obstruction although there were diagnostic difficulties posed by his autism During several admissions following the initial presentation he was successfully managed conservatively When he subsequently presented with a perforated gastric ulcer he displayed identical symptoms and signs and, had his failure to settle on conservative management been overlooked there may have been a quite different outcome

Although intestinal pseudo obstruction usually responds to a strict conservative regimen the diagnosis must not be assumed at re presentation of other potentially lethal pathologies may be missed

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ABSTRACT

Waugh P J Night Vision Goggles MFOM Dissertation 1994

Aircrew Night Vision Goggles (NVGs) are electro optical devices which are attached to the flying helmet and assist the crew member to see in conditions of relative darkness These devices add mass to the helmet and alter the centre of gravity Inertial forces resulting from heavy landings, survivable accidents or ejection from fixed wing cockpits were considered for their injury potential in the same inertial circumstances with and without NVGs

In the case of helicopters the risk of injury to the neck was considered An experiment was conducted using an instrumented Hybrid III dummy as a model of human biodynamic response The dummy was dressed in aircrew flying clothing and seated in a generic helicopter seat which was mounted on a wheeled sled The sled was impacted with an hydraulically controlled barrier to simulate a variety of inertial circumstances similar to heavy landings and survivable accidents The effect of inflatable bags incorporated into the shoulder harness known as Inflatable Body and Head Restraint System (IBAHRS) was also investigated

In the case of fixed wing ejections the goggles are automatically detached from the helmet prior to seat movement The risk of injury to the lower limbs was investigated using an instrumented Hybrid III dummy which was ejected from a mocked up cockpit Methods of protection for the femur were considered

The dissertation includes a literature review covering the strength and biodynamic performance of the human neck and femur The conclusions reached are that NVGs confer very little additional risk to the neck in heavy landings and survivable helicopter accidents IBAHRS has an important contribution to make in reducing the head strike envelope in confined cockpits and the risk of femur fracture due to striking the goggles in an ejection is not more than 5%

Note The Faculty of Occupational Medicine Royal College of Physicians of London awarded Surgeon Commander Waugh the Peter Taylor Medal for this dissertation the best submitted for Membership of the Faculty in 1994

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Research

Aspects of neurological decompression illness: A view from Bethesda

J R Broome

Abstract

A minority of divers with neurological decompression illness (DCI) fail to improve with recompression treatment. This is particularly seen in cases where features of severe spinal cord injury develop soon after surfacing. Haemorrhage into the spinal cord is implicated in the pathogenesis of these cases and evidence is presented that supports the view that the bleeding coincides with shrinkage of autochthonous bubbles. The role of hyperbaric oxygen therapy in the treatment of spinal cord DCI is discussed with reference to possible benefit in ischaemia reperfusion (I R) injury. Similarities and differences between the tissue injury of dysbaric and conventional spinal cord injury are outlined. The implications of advances in drug therapy for conventional spinal cord trauma are considered in the context of their potential application to treat neurological DCI.

INTRODUCTION

Diving medicine retains enormous challenges and exchange service with the United States Navy in the Naval Medical Research Institute (NMRI) Bethesda, Maryland, provides a Royal Naval medical officer with unique experience in military diving medicine that is no longer available in Britain. The following account briefly summarises the author's personal view of several issues related to neurological decompression illness (DCI) and its treatment.

Most patients with DCI respond well to conventional recompression therapy but treatment is ineffective for an important minority of cases. Clinically these cases tend to have neurological features suggestive of spinal cord injury and are either cases with early onset of severe signs or cases where there is significant delay before initiating recompression therapy. There is no generally accepted explanation for these treatment failures.

The pathological mechanisms for dysbaric central nervous system (CNS) injury are complex and remain controversial [1]. Where the condition is due to excess gas burden (as distinct from pulmonary barotrauma with gas emboli) several mechanisms may contribute to the disease process in varying degree depending on the circumstances. Extra vascular (untochthonous) bubbles are most likely in short latency cases, gaseous emboli venous infarction and ischaemia reperfusion effects being predominant in cases with delayed onset. However for many years it was assumed that the main problem was of ischaemia due to the persistence of inert gas bubble emboli in blood vessels [2 3]. In refractory cases this assumption led therapeutic efforts to eliminate any causative bubbles as rapidly and completely as possible by recompression to greater pressures (depths), by lengthy saturation treatments or by the breathing of exotic gas mixtures [4]. Use of these measures has been largely empirical and unfortunately none of them has proved convincingly effective. Indeed there has been little real advance in the treatment of DCI since the introduction of the short oxygen recompression tables (RN Tables 61 and 62) in the late 1960s and early 1970s. Difficulty in standardising the terminology used to describe the various presentations of DCI[5] have frustrated efforts to set up appropriately randomised therapeutic trials.

The author's work in NMRI has been to develop an animal model of neurological DCI with which to evaluate treatment strategies and identify modifiable risk factors for DCI. The animal used for the model is the pig which has many anatomical and physiological similarities to humans [6].

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The pigs undergo a simulated "dive" to a pressure equivalent to 200 feet of seawater (fsw) (65 msw) (612 6kPa) for 24 minutes in a dry compression chamber breathing air This pressure exposure produces a 70-75% incidence of neurological DCI Pigs that develop the condition are given appropriate sedation and i v fluids and are treated by recompression and oxygen on RN Table 62 (USN Table 6) in a manner analogous to human divers The time from diagnosis of DCI to commencing treatment is 10 20 minutes The success of treatment is judged 24 hours later by assessing the pigs ability to run on a treadmill Pigs are then anesthetised euthanised and undergo a detailed pathological examination

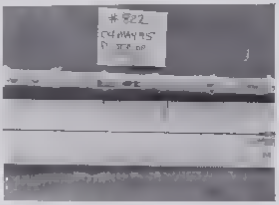

Figure 1 Spinal cord with petechial haemorrhages

HAEMORRHAGE AND THE PATHOGENESIS OF DYSBARIC SPINAL CORD INJURY

In 1908 Blick reported one of the largest series of autopsies on divers with fatal DCI [7] When describing the gross appearance of the spinal cords from these cases he wrote it looks as if one has stippled the face of the section (of the spinal cord) with a fine knife or needle with this condition is nearly always associated haemorrhage of greater or less extent He goes on to recount they (the haemorrhages) may range in size from mere points of blood to as I have seen in nine cases large haemorrhages practically cutting the cord in two Several other authors notably Brooks in 1907 [8] Smith [9] and Jaminet and Clarke in the 1870s [10 11] all describe acute haemorrhage in the cord or its membranes as a marked feature of DCI Despite such descriptions until recently[1] the role of CNS haemorrhage in the neuropathology of DCI in divers received little emphasis in most diving medicine texts

During our studies of neurological DCI in pigs it was soon noted that those pigs with early onset of neurological signs were often little improved by recompression treatment At necropsy these refractory cases were associated with petechial haemorrhages grossly visible in the spinal cord (*Figure 1*) which appeared remarkably similar to the historical descriptions of human cases On histological examination of the spinal cords from these pigs microscopic haemorrhages such as those illustrated in *Figure 2* were a typical finding Pigs that responded well to recompression treatment invariably had no or minimal haemorrhage in their CNS on histopathological examination

Figure 2 Cross section of spinal cord with multiple white matter haemorrhages (×25 H&E)

Further information is available We investigated the timing of the haemorrhage in an attempt to differentiate bleeding due to mechanical disruption of microvessels from bleeding into areas of infarction [1] Blood was taken from each of 15 pigs and the erythrocytes were labelled with a fluorescent marker The labelled red cells were then reinjected into the 15 pigs at different stages in the disease process before diving in three on DCI onset in three, immediately before recompression treatment in three and 10 minutes after reaching treatment pressure (60 fsw) (18 msw) (183 8kPa) in the remaining six pigs On the day after diving pigs were euthanised perfusion fixed and necropsy was performed Frozen sections of spinal cord were made Areas of haemorrhage were located by microscopy of frozen sections stained with hematoxylin and eosin then the same areas of haemorrhage in adjacent unstained frozen

sections were examined by fluorescent microscopy for the presence of labelled erythrocytes. The concept was that fluorescent cells would be absent from haemorrhages that had formed before injection of the labelled erythrocytes but fluorescence would be present if the haemorrhages took place while labelled erythrocytes were in the pigs circulation.

Labelled red cells were found to be present in the haemorrhagic cord lesions of all nine pigs reinjected *before* recompression treatment but were absent in the six pigs where the labelled cells were reinjected 10 minutes *after* recompression. This finding suggests that the haemorrhage coincided with recompression. A mechanism whereby autochthonous bubbles disrupt microvessels which then bleed when the bubbles shrink on recompression would explain this finding. Such a mechanism can also explain why some human cases deteriorate rapidly during or soon after the start of recompression treatment. The sudden relapse seen in some cases after or in the late stages of initially successful recompression treatment can be explained by secondary haemorrhage. One can also speculate that in the absence of recompression bubbles will shrink naturally over time and in cases where microvessels have been damaged delayed bleeding may occur, perhaps into an area of infarction or ischaemia.

In retrospect haemorrhagic lesions have been described in previous models of acute DCI in dogs and goats [13 14] and a photograph of petechial haemorrhage in the cord from a human victim of severe neurological DCI who died six days post dive has recently been published [15]. It seems likely that severe short latency human DCI shares a common pathology with the animal models, namely the potential for acute haemorrhage into the spinal cord. However the clinical significance of this has not been clearly stated: cases where haemorrhage has occurred are likely to be resistant to standard treatment - recompression and oxygen will shrink bubbles and increase tissue oxygenation but the consequences of haemorrhage into CNS tissue will not resolve acutely.

The above findings do not, of course, imply that we should avoid recompressing patients with early onset of neurological signs for fear of precipitating haemorrhage but they have implications for both the management and prognosis of diving cases in certain circumstances. For instance the understanding that CNS haemorrhage rather than just gas bubbles may contribute to the clinical condition of the patient might alter a decision to compress a severely ill or deteriorating patient beyond the 18msw (60fsw) pressure of Table 62 and thereby commit them to a lengthy saturation decompression. The question that defines the clinical management rationale in such cases subtly shifts from "Is recompression treatment good for eliminating bubbles?" — for which the answer is Yes — to the question "Is hyperbaric oxygen good for treating nervous system dysfunction associated with haemorrhage?" — to which the answer is "Possibly, but we don't really know".

HYPERBARIC OXYGEN

Hyperbaric oxygen (HBO) therapy, where the patient breathes oxygen in a pressurised chamber, is the main treatment modality for acute DCI. The initial beneficial effect of HBO is generally accepted: tissue oxygenation in general and the oxygenation of injured or ischaemic tissue in particular, is improved due to simple diffusion. Arteriolar vasoconstriction lowers capillary pressure and limits oedema. Simple recompression shrinks bubbles, while the raised partial pressure of oxygen accelerates the elimination of inert gas by enhancing the diffusion gradient between tissues and blood. Animal studies suggest that physical gas bubbles are rapidly eliminated from CNS tissue, even in the absence of recompression [1]. The injury that remains when the bubbles have gone results from the mechanical compression and distortion of CNS tissue that they caused, the damage to vascular endothelium, activation of inflammatory mechanisms, and the consequences of microvascular stasis. Histologically the acute injury typically manifests as disruption and oedema of axons, haemorrhage, ischaemia/infarction or a combination of these [8] (*Figure 3*). Repeated recompression treatments of DCI victims are carried out under the assumption that HBO is of benefit in these conditions. This is the accepted standard of care, but there have been no appropriately controlled studies to confirm the efficacy of repeat treatments. The difficulty is in distinguishing the clinical improvement that frequently occurs over time in untreated cases, from a therapeutic effect of HBO.

Despite the comments above, there is growing indirect evidence of mechanisms by which HBO could benefit the tissue injury in spinal cord DCI. Whatever the mechanism of injury, reversible microcirculatory stasis may occur and initiate a complex series of events resulting in the no-

Figure 3 Long section of spinal cord showing a region with swollen axonal myelin with erythrocytes infiltrating the white matter from a focus of haemorrhage (×250 H&E)

reflow[1] phenomenon or ischaemia-reperfusion (I-R) injury. Our knowledge of the mechanisms of I-R injury derives from many areas of biomedical research [17] but evidence for clinical efficacy of HBO in this condition comes mainly from work in the context of reconstructive surgery [18–20]. Leukocytes are known to adhere to damaged vascular endothelium at the site of I-R injury[21] and promote cell damage by production of oxygen free radicals, which induce lipid peroxidation [21]. Lipid peroxidation is a process that spreads across cell membranes and disrupts the physiological ionic gradients across the membrane. It impairs the normal function of phospholipid-dependent enzymes and, if sufficiently severe, results in membrane lysis [21]. In addition to oxygen radical production, adherent leukocytes are known to release a number of vasoactive substances that induce spasm in local arterioles[22] and contribute to post injury hypoperfusion and ischaemia.

In skin flap models of I-R injury, HBO has repeatedly been shown to increase flap survival [19–23]. This may be explained by the finding that HBO can dramatically reduce leucocyte adherence at the site of injury [24]. A mechanism for this effect has been suggested by Thom[24] who showed that HBO reversibly inhibits leucocyte β2 integrin function which is involved in the persistent adherence of leukocytes to vascular endothelium. HBO has also been shown to inhibit carbon monoxide-mediated lipid peroxidation of rat brain tissue [25, 26]. If HBO produces similar beneficial effects in damaged spinal cord tissue, then any clinical efficacy in human dysbaric CNS injury could be explained.

ANALOGY OF DYSBARIC INJURY WITH CONVENTIONAL SPINAL CORD TRAUMA

Where mechanisms like I-R injury and haemorrhage are involved in dysbaric spinal cord injury, comparison with the disease process of conventional spinal cord trauma is appropriate. At a cellular level the final common path of injury is likely to be similar but grossly there are several obvious differences. Firstly, the diver's injury is not usually complicated by the need to stabilise vertebral fractures and manage hypovolaemic shock and other features of major trauma of which spinal cord injury is but one albeit important aspect. Secondly, actual traumatic section of all or part of the cord is not usually a feature in dysbaric injury. Thirdly, the disease process in DCI is typically one of multiple small predominantly white matter lesions at different levels in the cord,[1] rather than the single large focus of injury common in spinal cord trauma cases. In divers therefore the injury is mainly axonal and the neurone cell body (which contains the biomolecular machinery for cellular repair) is largely spared. This contrasts with the injury in conventional spinal cord trauma, which often manifests as a central contusion with maximal damage to the grey matter in the centre of the cord and lesser injury to the surrounding white matter [7]. For the theoretical reasons above, the prospects for clinical recovery would seem better for divers. Anecdotally this prediction appears to be borne out in practice [5], although good long term follow up studies in divers are lacking.

Work studying conventional CNS trauma suggests remarkable functional redundancy

even in the spinal cord. Experiments in animals indicate that as few as four to six percent of normally functioning axons in a motor tract can sustain normal motor function in the muscle they supply. Furthermore these experiments suggest a threshold effect whereby an increase in axonal survival from less than three percent to more than six percent in tracts passing through the site of injury converts paralysed muscles to muscles with normal movement.[27] The implication for recovery of both dysbaric and conventional spinal cord injury is that even a small improvement in physiologic axonal survival may produce dramatic clinical benefit.

Studies of HBO treatment in conventional spinal cord trauma have been inconclusive although controlled animal studies have suggested benefit.[29] Interpretation of the human work is beset by problems of delay to treatment and the use of different partial pressures of oxygen.[30]

FUTURE ADJUNCTIVE DRUG THERAPIES

Turning to the prospects for improved therapy of dysbaric CNS injury it is likely that these will arise from improved treatments for conventional spinal cord injury. This subject has recently been concisely reviewed by Hall and Braughler.[31] Considerable progress has been made following the demonstration in 1991 that high-dose methylprednisolone improved the outcome for human spinal trauma patients.[31] The mechanism of action of the methylprednisolone is now thought to be due not to an effect on gluco corticoid receptors or oedema but to a reduction in oxygen radical mediated lipid peroxidation of injured cell membranes and inhibition of post injury hypoperfusion. The importance of commencing treatment within eight hours of injury was highlighted by the methylprednisolone study[32] and the finding of this therapeutic window for drug treatment[32] may have implications for the timing of HBO treatment of dysbaric spinal injury.

A variety of other pharmacological strategies which involve anti oxidant drugs and/or inhibitors of lipid peroxidation show great promise as future therapy of CNS injury.[28] Perhaps the most exciting potential therapeutic advance is the development of a non glucocorticoid class of steroids. The 21-aminosteroids or lazaroids which are potent inhibitors of iron-catalysed lipid peroxidation.[21] This is particularly interesting because both the formation of oxygen radicals and the process of lipid peroxidation in the CNS may be catalysed by iron and haemoglobin from extravasated erythrocytes at a site of haemorrhage is an obvious source. The efficacy of one lazaroid tirilizad mesylate has been demonstrated *in vivo* in controlled blinded studies in animals.[34] Currently phase III human trials in head injury, subarachnoid haemorrhage and spinal cord trauma are in progress and the results are eagerly awaited. Their potential relevance to the management of dysbaric spinal cord injury is obvious.

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The experiments reported herein were conducted according to the principles set forth in the *Guide for the Care and Use of Laboratory Animals*. Institute of Laboratory Animal Resources National Research Council. DDH Publ. No. (NIH) 85-23.

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ABSTRACT

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Objective — To determine whether divers with histories of neurological decompression illness are electro encephalographically distinguishable from non-divers

Methods — The electroencephalograms (EEGs) from 68 divers with histories of neurological decompression illness and 45 non-diver controls were examined independently by two clinical neuro physiologists

Results — The diver and non-diver groups were electro-encephalographically indistinguishable

Conclusion — There is no electroencephalographic evidence for the existence of cerebral dysfunction in divers with histories of decompression illness

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Audit and Management

The follow up of Acute Otitis Media in general practice

A P Newton

Abstract

Acute Otitis Media is a common condition of childhood which potentially has a number of significant sequelae including the development of Otitis Media with Effusion (Glue Ear) A general practice based study is described which assesses the implementation of a protocol for the follow up of Acute Otitis Media by the primary care team The results of this study show that following the introduction of a follow up protocol a significantly improved rate of follow up was achieved with resultant improvements in the identification of Glue Ear and hence more appropriate referral for ENT care

DEFINITIONS

For the purposes of this paper the following definitions have been accepted

Acute Otitis Media is an inflammation with purulent infection of the middle ear cleft, characteristically of sudden onset and short duration (no longer than three weeks and usually only a few days) The tympanic membrane is reddened with pain and systemic symptoms of infection (pyrexia etc) generally present Otorrhoea due to spontaneous rupture of the tympanic membrane may be present

Otitis Media with Effusion is an accumulation of fluid behind an intact tympanic membrane without local or systemic infective symptoms Short episodes of mild otalgia may occur The condition is associated with a variable degree of conductive hearing loss

The word chronic implies a total unremitting duration of three months or more [1] Otitis Media with Effusion is known by many as Glue Ear

INTRODUCTION

Acute Otitis Media (AOM) is the most common acute medical condition of childhood To precipitate a request for a consultation with the general practitioner An American research study showed that AOM was responsible for one third of the total urgent paediatric visits to a Health Centre [2] More than 50% of children will have experienced an episode of AOM before they reach their first birthday[3] and approximately 35% of children experience recurrent episodes of AOM during the first three years of their lives [3 4]

A small percentage of children who experienced AOM develop Otitis Media with Effusion (OME) with the presence of a middle ear effusion which persists for more than three months [3 4 5]

A number of sequelae can result from OME the presence of a middle ear effusion causes mild to moderate conductive hearing loss and occasionally recurrent AOM can lead to sensorineural hearing loss [6] Recently it has been demonstrated that chronic OME has a negative influence on speech and language development attention span at school and social behaviour patterns of young children in the 2 6 year age group [7] this negative influence appears to have long lasting effects in some cases with children remaining significantly disadvantaged in important aspects of their educational and psychological development throughout their mid-childhood years [8]

Because of both the short term medical sequelae and the long term educational/ psychological sequelae it is highly desirable to identify children with OME so that an appropriate risk/benefit decision can be made as to whether to institute active treatment for the child in question [9] The treatment of AOM has

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been the focus of much research, with heated debate between the pro-antibiotic and the anti-antibiotic lobbies A research project in Holland concluded that the treatment of AOM in children can be limited to nose drops and analgesics alone_with the vast majority of cases responding to this therapy within three to four days [1] This school of thought was supported more recently by an article in the BMJ which concluded that antibiotics are not necessary in the majority of cases of AOM [1] Some research workers have taken this line one stage further by arguing that antibiotics can actually cause OME by damping down AOM and leading to a change in the bacterial colonization of the post nasal space eustachian tube and middle ear cleft [2] To counter these arguments recent research work conducted by a General Practice Unit in Southampton has demonstrated that using antibiotics in the treatment of AOM in children substantially improves the short term outcome of the condition (as assessed by the rate of pain resolution the persistence of fever and the mean duration of crying) [3] This study also looked at longer term follow up concluding that the use of antibiotics did not in any way influence either recurrence rate or persistence of middle ear effusion

The argument for using antibiotics to treat AOM is certainly supported by microbiological studies of aspirates taken by tympanocentesis during an acute attack pathogenic bacteria being found in over 60% of cases (predominantly *Streptococcus Pneumoniae Haemophilus Influenzae* and *Branhamella Catarrhalis*) [14]

The treatment of OME has also been the focus of much controversy Since the development of ear ventilation tubes in 1954[15] the surgical procedure of myringotomy and grommets has become the most frequently undertaken operation in children [16] This increase in the use of grommets may just be fashion or it may in fact represent an epidemic of OME secondary to increasing pollution levels and increasing rates of allergic/seasonal rhinitis [1] Recently this medical controversy has been highlighted by political pressure and by criticism of waiting list lengths by the national media

The confusion which currently exists about exactly how we should be treating and following up AOM and OME indicates a need for a structured and agreed management protocol acceptable to (and capable of producing close co-operation between) the primary care team and the hospital specialists

AIMS AND OBJECTIVES

The objectives of the study were

i To audit the incidence and management of AOM within the practice population with particular reference to the use of antibiotics and the provision of follow up

ii To assess the usefulness of the tympanomanometer as an instrument for general practice use

iii To assess the outcome of instituting a practice protocol for the active follow up of AOM using tympanomanmmetry

iv To establish data on the frequency with which persistent middle ear effusion follows an episode of AOM and the average duration of such effusions

PRACTICE POPULATION

Vanbrugh Hill Health Centre is a group Practice with six doctors (four partners and two trainees) situated in central South East London The Practice population of 10 800 spans a very broad cross section of social classes and ethnic groups Children under the age of ten years comprise 11% of the Practice population (analysis of the paediatric population over the period referred to in this study demonstrated an even distribution throughout the age range with no one cohort being over represented) The practice catchment area includes several areas which we classed as being socially deprived Dense population heavy traffic and industry in the area all contribute towards the area's higher than average pollution Recent data collected by the local Department of Community Paediatrics (unpublished) has shown that the area has a higher than average incidence of paediatric upper respiratory infection and paediatric asthma

METHODS

1 **Retrospective Study** The retrospective part of the study was conducted by auditing the clinical notes of all children registered with the Practice who were under the age of ten on 1 January 1991 The notes on all clinical consultations with these children during 1990 were surveyed and a detailed record made of all consultations where the diagnosis of AOM was made

The following information was recorded in each case age treatment prescribed proposed follow up, follow up achieved and details of any ENT referral made along with the eventual outcome

2 **Prospective study** All children under the age of ten registered with the Practice and diagnosed as suffering from AOM during the one year period from 1 May 1991 to 1 May 1992 were entered into the prospective study (the only exceptions to inclusion being the presence of craniofacial abnormality Cystic Fibrosis Down s Syndrome or the presence of a chronic perforation of the tympanic membrane) The doctor making the diagnosis commenced therapy with Paracetamol (for an illness and control of pyrexia) and a five day course of Amoxycillin at the appropriate dosage (unless contra indicated by a history of previous hypersensitivity in which case Erythromycin was substituted) The patient s parents were given an information sheet on AOM and were requested to make a review appointment to see the project doctor (the author) after ten days A cross check was maintained and any subjects who did not return for follow up were sent a reminder by post

At the ten day follow up appointment the presenting history was checked the response to therapy recorded and an otoscopic and tympanomanometric study of the patient s ears performed (provided that parental consent for inclusion in the study was forthcoming) If a middle ear effusion was detected in one or both middle ear clefts arrangements were made to review the subject after a further three weeks for repeat assessment Children with persistent effusions were followed up at monthly intervals (with repeat tympanomanometry at each review) until resolution of the effusion occurred or until the three month post infection point was reached

Children who had persistent effusions at the three month point were treated with a four week course of Co Trimoxazole and assessed on completion of the medication if middle ear effusions were still present at this stage then a referral for specialist opinion was made Anti allergy medications such as Beclomethasone nasal spray and Terfenadine were prescribed at the one month review if felt to be clinically indicated

A diary-based index of all children under follow up was maintained so that any defaulters could be sent a further appointment additionally the clinical notes were flagged so that reminders could be given on an opportunity basis

EQUIPMENT AND INTERPRETATION OF TYMPANOMANOMETRIC RECORDINGS

A Gravstad Earscan 2 microprocessor controlled impedance meter was used for all tympanomanometer recordings This instrument offers both a one second and a three second test cycle and is calibrated to record middle ear pressure in the range + 200 to −310 daPa After recording the patient s data is presented on the unit s display screen as a graphic display with numerical recordings of middle ear pressure compliance physical volume and gradient A printout can be produced for the patient s records Impedance audiometers assess the flow of acoustic energy through the tympanic membrane Where middle ear dysfunction is present the normal flow pattern is disrupted and this is particularly evident where there is an effusion in the middle ear cleft Impedance testing is particularly practicable for use with young children as it is a simple to perform technique which has a high degree of sensitivity and specificity for the detection of abnormalities of middle ear function [9]

Tympanomanometry describes how tympanic membrane compliance changes as air pressure is varied in the sealed external canal The basic datum is a function of pressure against compliance which can be classified into one of three basic types according to the Jerger classification [9] This classification system was used to differentiate normal from abnormal for the purposes of this study

Standard equipment checks and servicing of the tympanomanometer were conducted to ensure consistent accuracy of recordings

RESULTS

I **Retrospective study**

i **Incidence** The case records of 1,225 children under the age of ten were surveyed The diagnosis of AOM was recorded on a total of 218 occasions involving 172 children One hundred and thirty five children were recorded as having suffered a single episode and 37 children as having suffered two or more episodes This equates to an annual incidence of 14% in the paediatric population under the age of ten years

ii **Treatment** In all cases treatment with Paracetamol plus an antibiotic was recommended The majority of children were prescribed Amoxycillin with Erythromycin and Co Trimoxazole prescriptions accounting for the remainder

iii **Follow up** Of the 172 children identified as having experienced an episode of Acute Otitis Media only 142 (65%) were requested to attend for review 7 10 days after the

initial consultation (as judged by entries in the clinical notes). However less than half of these actually attended for review. The overall percentage follow up rate was calculated as being 29%.

iv **ENT referral**. Of the children who were followed up 19 were referred for ENT opinion of whom 11 (58%) of the total referred) required surgery involving myringotomy and grommet insertion.

2. Prospective study:

During the year of the prospective study there were 1 258 children under 10 years of age registered with the Practice.

i **Incidence.** During the prospective study year 201 episodes of AOM were diagnosed. One hundred and fifty five children suffered one episode and 23 children had two episodes. This equates to an annual incidence rate of 14% (comparable to that recorded in the retrospective study).

An age specific breakdown of the data revealed the peak incidence of AOM to be in the 4-5 year age group (*Figure 1*). Equivalent numbers of boys and girls were affected and an age/sex specific breakdown did not demonstrate any difference in age distribution between the sexes.

ii **Follow up**. Of the diagnosed cases of AOM, 89% attended for review without the need for a reminder. The remainder attended following a written reminder to their home address thus a follow up rate of 100% was achieved. Ninety one cases (45%) had no effusion present when assessed at the ten day stage. The remaining 110 (55%) had either unilateral (ipsilateral to the original infection) or bilateral effusions and were followed up in accordance with the protocol. An age specific breakdown of the children who had a persistent effusion at the ten day

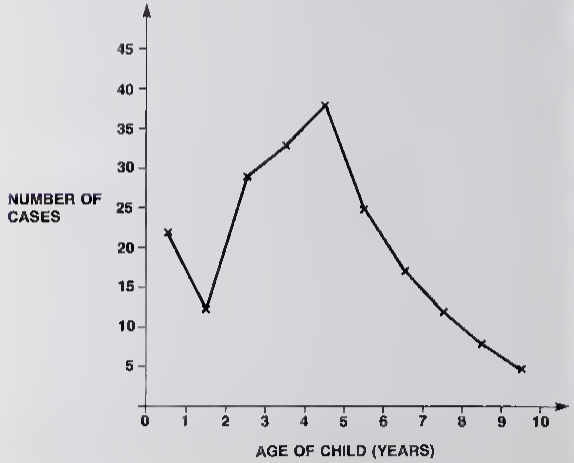

Figure 1 The incidence of Acute Otitis Media by age

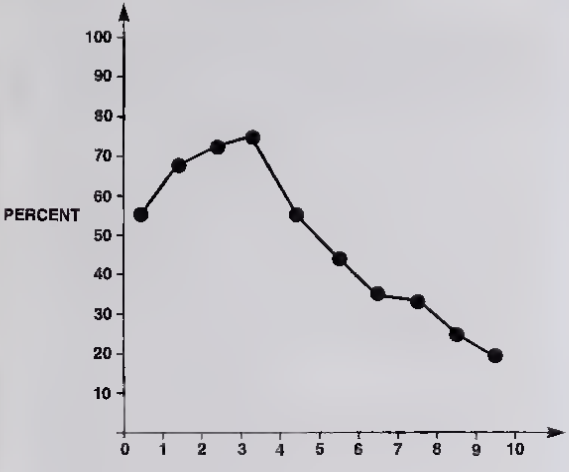

Figure 2 The percentage of children within each age group who had a middle ear effusion present at follow up ten days after presenting with AOM

review was performed A graph showing this age specific breakdown is presented (*Figure 2*)

A graph showing the cumulative percentage of children whose effusions had resolved spontaneously at each point in the follow up protocol is presented (*Figure 3*) The 34 children who still had a persistent effusion at the three month point were treated with a one month course of Co-Trimoxazole At the end of this treatment 27 still had an effusion (and of the seven who cleared their effusion during the time on Co-Trimoxazole only two remained clear of effusion after a further month of follow up) In all cases where a unilateral effusion was noted at the ten day point complete return to normality had occurred by the two month follow up

Referrals to ENT clinic Thirty two children were referred for ENT opinion of whom 25 (78%) required surgery including myringotomy and grommets All the children treated surgically fell into the age range 3 9 years with over half being aged 4 6 years

Of the children admitted for surgery over 90% were seen on only one occasion prior to admission for operation

ANALYSIS OF RESULTS

Both the retrospective and the prospective sections of the study demonstrated the incidence of AOM to be approximately 14%

in the under ten year old age group of the population studied In this study the largest number of new cases of AOM occurred in the single year age band 4-5 (*Figure 1*) This observation that 4 5 year olds are the most commonly affected age group agrees well with other studies

ii By actively encouraging (and reminding) parents to bring their children for follow up of AOM the percentage of children actually reviewed rose from 29% to 100%

iii Over half of the children studied had an effusion present in one or both ears at the ten day follow up A greater percentage of 2 5 year olds had an effusion present at the ten day follow up than did children over the age of 5 (*Figure 2*) Statistical analysis using the Chi Squared test showed this to be a highly significant difference ($P<0.05$)

iv Spontaneous resolution of the middle ear effusion occurred in the majority of children (*Figure 3*) Statistical analysis using the Chi Squared test demonstrated that a significant rate of improvement occurs on a monthly basis up until the three month stage ($P<0.01$)

DISCUSSION

The proposal made by Paparella that it is highly desirable to identify those children at high risk of developing sequelae secondary to OME so that appropriate therapy can be instituted [6] begs the question what is the best way of identifying these children?

The screening of children at school entry using clinical examination and sweep audiometry (as is currently used in Britain) is one possible method for detecting children with OME However as demonstrated by the results of this study many children have problems before school entry age Therefore placing a reliance on detecting the problem at the school entry examination is to condemn many children to a legacy of problems as a result of not detecting their condition early enough with consequent implications for speech and language learning

Research evidence suggests that placing a reliance on clinical examination and sweep audiometry alone leads to a significant number of cases of OME being missed [20] The widespread addition of tympanometry to the pre school screening process would help to improve the detection rate of OME however the problem of early detection would still remain largely unaddressed

By actively and aggressively following up episodes of AOM in the general practice setting it would be possible to identify more readily those children with significant middle ear problems and hence to refer them for early intervention A number of studies have assessed different protocols for the follow up of AOM using audiometry [21] and tympanometry [15] Arising out of these studies protocols have been proposed for use in general practice [13,15]

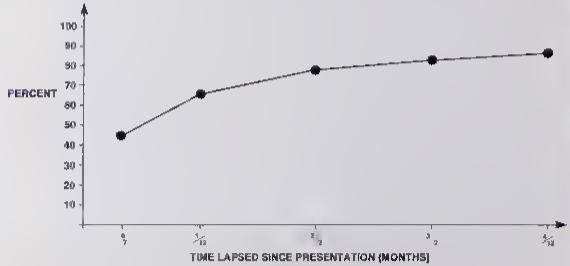

Figure 3 The resolution of middle ear effusions with time The cumulative percentage of children free from middle ear effusion as assessed at each follow up point

however none have been widely accepted in this country where there is still widespread controversy (even amongst ENT surgeons) as to how to best treat this common condition

Close liaison between primary care workers and hospital specialists is needed to ensure the adoption of mutually acceptable protocols that work to the advantage of both professional groups and for the positive benefit of the patient

The increasing availability and affordability of tympanomanometry offers the chance for general practitioners to become more involved in the investigation and follow up of middle ear disease however protocols are needed to avoid an over reliance on technology leading to over diagnosis and over treatment [2]

SUMMARY

The introduction of a protocol for the active follow up of children presenting with AOM within a large group practice led to a marked increase in the percentage of children actually seen for review after completion of initial treatment

AOM occurs most frequently in children aged four to five years old therefore children under the age of five should be especially carefully monitored to ensure that OME does not go undetected The findings of this study indicate that if general practitioners actively followed up children presenting with AOM using a protocol such as that described it would be reasonable to expect improved detection of OME in pre school children This in turn would enable early intervention and therapy to be aimed at reducing the detrimental effects of OME on speech and language learning Finally the successful identification of patients requiring referral for ENT surgery results in optimal utilisation of resources in both primary and secondary care

From the experience gained in the course of this study the participating doctors found the tympanomanometer to be a very valuable addition to the range of diagnostic equipment within the practice This technique for using the equipment were easily mastered and the resultant improvement in the follow up of middle ear problems was much appreciated by doctors and patients alike

Further research is needed to assess whether the national implementation of a protocol such as that described would hold any advantages over the current policy of screening children for OME at school entry

ACKNOWLEDGEMENTS

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Health and Safety in Medical Centres; finding the hazards and reducing the risks

Joan D Buchanan

Medical Centres are regarded as places where people are looked after rather than places of hazard!! We (the medical world) always think it will never happen to us

I'm a Doctor I'm a nurse We don't have accidents or get sick — and if we did we know a man who can fix it!

But why should we be any less at risk than any other employees in the working environment? Why should we wait for an accident or ill health to happen just because in the unlikely event we might have easy access to expertise to pick up the pieces? The medical world is not exempt from accidents — nor from health and safety law

Before you quote the old adage of 'blasted drain sniffers' — empire building again let me remind you that health and safety law is not new It has developed over the last 200 years and since the Health and Safety at Work etc Act 1974 (HSWA) general duties and responsibilities have been placed on every employer to provide a safe and healthy place of work for all employees The Act formed a general framework for health and safety which enabled more specific legislation to be introduced under its umbrella e g Electricity at Work Regulations (EAWR), Control of Substances Hazardous to Health Regulations (COSHH) and the more recent European Community Directives which led to a range of Regulations at the beginning of 1993 These included the Management of Health and Safety at Work Regulations (MHSWR) The MHSWR work in a similar way to the HSWA in fact they can be seen as a fleshing up of what was already there Central to these Regulations is risk assessment The onus is now on the manager to assess how an accident or ill health can occur and to decide upon a strategy to prevent it before it happens

MOD is bound by the general duties of the HSWA — THERE IS NO CROWN EXEMPTION! Although the Crown cannot be prosecuted criminal proceedings can be brought against any employee from the CO/HOD to rating/shop floor worker where due care has not been exercised As a result of being bound by HSWA MOD units and establishments are open to inspection by the Health and Safety Executive

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under the terms of the General Agreement (JSP 375) Although the operational parts and military training units are usually exempt from HSE inspection an important exception to this rule is that MOD civilians are given full rights under the Act and that HSE may proceed reactively if an inspection is requested by a civilian (operational or not) or when an accident occurs involving MOD civilians The terms of the General Agreement are currently being revised[1]

The Secretary of State for Defence has overall responsibility as our employer for seeing that the HSWA is implemented To discharge his duties he has issued a Health and Safety policy statement (DCI 54/93) reproduced in the MOD Health and Safety Handbook (JSP 375) which states that health and safety is a line management responsibility He exercises his health and safety responsibilities through the Defence Council down ultimately to Heads of Establishments and Commanding Officers whence it should cascade through line managers to individual employees Everyone has a responsibility for health and safety The policy states that all departments will comply with the HSWA and this should be achieved by identification of potential hazards, their assessment and control Hence a proactive approach to health and safety is required rather than only being reactive

Every line manager has a responsibility for the health and safety of staff in their care and therefore must be intimately involved with Hazard Identification and Risk Assessment The extent of the assessment should be proportional to the level of risk involved If the risk is found to be unacceptable then the hazard should be removed if this is not reasonably practicable then the hazard must be controlled to reduce the risk. The assessment can only be effective if control measures developed are actually implemented and carefully managed This will include maintenance appropriate training health surveillance and regular monitoring to ensure continued effectiveness thus ensuring that the risks stay minimal Monitoring should be in the form of self regulation and auditing This is an important control system to ensure that deteriorating standards are detected and that the entire organisation is effective in relation to health and safety A more formal external audit may be carried out by an independent body e g the Command Health and Safety Group but this does not remove the responsibility from Management to ensure supervision and regular checking by line managers supervisors and the safety wardens

The information gathered at the initial hazard identification will provide a rapid indication of the hazards that should be assessed under associated regulations. e g The Control of Substances Hazardous to Health Regulations (COSHH) The Manual Handling Operations Regulations (MHOR) and the Health and Safety (Display Screen Equipment) Regulations (H&S(DSE)R)

Now having been reminded of our responsibilities under current health and safety Regulations let s have a little exercise and take a stroll through a Medical Centre with our health and safety hat on and see how many hazards we can identify[1]

A DAY IN RNSO HAZARD

It s a cold frosty bleak day as I approach the Medical Centre Having circumnavigated the contractor s debris I almost slip on the ice patch at the door (must fix that dripping pipe[1]) just prior to tripping over the unkempt doormat in the poorly lit entrance I soon discover once I am up to my knees in dirty linen bags that this in fact is not only the entrance to the Medical Centre but sadly doubles as the laundry collection point[1]

I approach the reception area where I shall be working for the first part of the day "Well there should be no problem here — offices are safe area I they" said she confidently leaning back tilting the legs of the chair and over balancing and falling Only hurt pride this time so I hurriedly pick myself up and decide to get on with some work! I trip over the trailing telephone lead on the way to the dreaded word processor bumping my leg on the open drawer of the filing cabinet en route

At last having reached sanctuary I sit down at the computer mind boggled because I ve had no training in the use of it but we ll muddle through — the headaches always settle by the weekend and I don t fal nearly as anxious and depressed[1] It s just as well that they ve got all this paper stored in boxes under the desk because then I ve got something to rest my feet on said it s at such an awkward angle Just kick my bag of knitting under my feet for standeasy — mind you we were so busy yesterday I didn t get a break all day from word processing! After a while sitting at the cluttered desk and finding it impossible to decipher any more totally illegible writing under the glare of the overhead lighting I decide to leave my non adjustable chair Anyway someone wants to borrow it to stand on to change a light bulb I head over to the photocopier

It happens every time! I always have to top up the machine and end up with ink all over my hands. It wouldn't be so bad if there was a nearby sink to wash them or I could wear disposible gloves. I decide maybe it's time to move onto another area so I rapidly exit reception averting my eyes from the employee who has 'accidentally trimmed her finger nail on the guillotine' and the one who has stapled his thumb and leave them to deal with the small fire that has started in the waste paper bin caused by a discarded cigarette end[1]. Phew! Lucky offices are safe?

Well it's now time to do a spell in the Treatment Room. There is a session of vaccinations going on. Do hope I don't have another needlestick injury? Well I survived that — at least the little nick from opening the ampoule will heal quickly. It's so small I won't even bother with a plaster — now I must get on with these dressings? Now where do I dispose of these infected pads — is it a yellow bag or a white one? Oh dear I've spilt some antiseptic, never mind. I'll wipe it up later. I must get on with that supporting cast. The smell from the vapours at that casting is really strong, it doesn't half catch my breath and make my eyes sting. I do wish I could open a window but it's stuck with paint. Not to worry I'll finish the sterilising — Ouch that was hot! What have we got for a scald! Perhaps I'll take those blood specimens to the laboratory — oops! I knew I should have wiped that spillage up now I'm going to have to find somewhere to put this broken glass[1].

Life in the laboratory doesn't look too safe either what with taking bloods (all those sharps again) and handling specimens from people with nasty infections and all those different bottles of chemicals. I wonder if he is supposed to pour that down the sink! I think I'll give that one a miss and move on to the Medical Store and Pharmacy.

My, how do they get all those heavy stores up onto those high shelves? I wonder what's in this bottle, it's not properly labelled or maybe I just can't read it in this poor lighting. Look at all these toxic chemicals, flammables, dangerous gases and corrosives. I wonder what I'll do if there is a leakage, spillage or fire! I certainly won't be able to escape with that trolley blocking the fire exit! This gangway's a bit cluttered still I should be able to lift all these heavy boxes past but it will mean a bit of stretching to reach the top shelf. Ah, there's a stepladder and I'm sure if I miss out the two wobbly lower rungs I'll be fine!

Maybe it's time to move on again. The Ward is bound to be a nice safe place. Well there is that poor nurse who has been off sick for weeks now with back problems though I'm sure it didn't result from lifting patients. Although they do say the most common of all work related injuries are lower back injuries, usually caused by twisting the back or lifting. Perhaps I'll give the Ward a miss.

Well what have we got left? The Doctors' consulting rooms? Yes, well I think I'll leave that one for another day after all I must get home and start having an anxiety attack about redundancy!

Well how many did you spot. All right so some it may seem trite and glib and perhaps it's not your typical Medical Centre but all these hazards and many more are there and all waiting for an accident or ill health to happen. There is no suitable excuse to ignore the facts that the Health Care profession are any less at risk to workplace hazards than any other business. As we have already discussed, current Legislation places duties on all employers to reduce the risk of injury and ill health at work by carrying out assessments of the workplace to provide information to employees of the health and safety risks identified in these assessments and to reduce the risk of injury or ill health from unavoidable hazards. Perhaps if our manager of RNSQ Hazard had carried out his responsibilities and risk assessed his workplace he would have identified the general hazards under the requirements of the MHSWR, which would have then indicated the more specific hazards e.g. hazardous substances, manual handling operations and visual display screen equipment which require assessment under COSHH, MHOR and the H&S(DSE)R. Once identified, assessed and suitably controlled the manager would not only have met his legal duties but also avoided unnecessary suffering to his employees.

Medical Centres present particular and in some cases unique health and safety problems when compared with other industrial settings. These problems can affect the patient, staff and visitor. As Medical Centres are concerned with patient care they should be exemplary and play a leading role in the implementation of Health Promotion.

In a Primary Care environment hazards are categorised in the same way as in any other work place. These are Chemical, Physical, Biological and Psychological conditions. An extensive list of potential exposures within a Primary Care environment are detailed at *Table 1*.

Table 1 Hazards in a Medical Centre

Chemical	*Physical*	*Biological*	*Psychological*
Aerosols	Compressed air	Allergies	Hours of work
Anaesthetics	Electricity	Cross infection (Hep B/AIDS)	Inadequate Ventilation
Bleaches	Explosive gases	Handling of path specimens	Interstaff relationship
Cleansers	Fire	Hepatitis	Job dissatisfaction
Detergents	Heating	Infectious diseases	Management practices
Disinfectants	Hot Water	Needlestick injuries	Motivation
Drugs	Ionising radiation	Spillage and breakage	Responsibilities
Gases	Lighting	Sewage disposal	Selection of staff
Laboratory Chemicals	Lifting	Waste disposal	Training of staff
Oils	Manual Handling		Shift work
Ozone	Noise		Social environment
Photocopying	Non ionising radiation		Staff/patient/ visitor relationship
Polishes	Poor design of buildings/ equipment		Stress
Refrigerant gases	Poor housekeeping		Work environment
Radiographic toxic fumes	Slips trips and falls		Work participation
Soaps	Ventilation		Violence in workplace
Solvents	Visual display equipment		Threat of redundancy
Sterilants			

Given these multiple hazards- the special nature of a Medical Centre environment and the expectations of those within its walls health and safety cannot be left to occur naturally but must instead be specifically provided and monitored The goals of a Medical Centre s Safety Policy as in any Safety Policy- should be to prevent injury or ill health and to protect the Company from actions by authorities and individuals that will prevent or distract it from fulfilling it s health care mission

Remember you are not alone out there Yes- managers have responsibilities to ensure the health and safety of their employees but advice and help in carrying out this role can be sought from establishment safety advisors and Command health and safety groups who will also provide appropriate training in assessment

Finally you may say why me? Why is the Drain Snuffer inflicting GBH on Medical Centres? Well what I say is Hospitals watch this space!

J roy nav med Serv 1995 81 138 141

Training

Elective Report: Summer 1994 — American Airlines

S Bland

INTROOUCTION

As part of the medicine course at Manchester University each student undertakes an elective at home or abroad over the summer prior to commencing the final year The elective may be in any subject related to medicine ranging from medical journalism to brushing up on general medicine As I have an interest in aerospace medicine I took advantage of an opportunity to undertake an elective at the Medical Department of American Airlines in Dallas Texas for a five week period in August 1994 The elective was extremely rewarding and may be of interest to others

AMERICAN AIRLINES AND AMR

American Airlines (American or AA) has its roots in the 1920s with the early airmail service From carrying cargo the natural progression was to carry passengers American now has a fleet of 663 aircraft and serves 182 cities worldwide with 2 480 daily departures American Airlines under the parent company AMR Corporation also has a regional airline AMR Eagle with a fleet of 277 aircraft extending the number of cities served to 349

The airline has 94 760 employees Its headquarters is at Dallas/Fort Worth Airport Texas with bases in Chicago Miami Nashville Raleigh/Durham and San Juan The parent company (AMR) has nearly 120 000 employees and in addition to air transportation operates ground services and distribution, a computer travel information network and its own television company [1]

Acting Surgeon Lieutenant Bland is a Pre Registration House Officer in the Surgical Department Royal Naval Hospital Haslar

AA MEDICAL — ROLE AND ORGANISATION

American Airlines Medical Department provides services to the whole of the AMR parent company The vast majority of the department's work is committed to occupational and aviation medicine It has a staff of about 100 people spread throughout the system In addition to carrying out medical cover pre employment physicals and drug screening the department runs an Employee Assistance Program (EAP) and a Prevention Program which will be described later AA Medical liases closely with several other departments within the company including the Workers Compensation Board the Workers Accommodation Board and the Legal Department The medical department also liases with the Federal Aviation Authority (FAA) similar in role to the British Civil Aviation Authority the Department of Transportation (DOT) and the Occupational Health and Safety Authority (OHSA) again similar to the British Health and Safety Executive

The AA Medical Department is based at Dallas/Fort Worth (DFW) and was the base for the elective The complex at DFW includes the corporate medical department the medical facilities covering the Dallas/Fort Worth area and a clinic at Alliance Fort Worth airport (the maintenance facility close to DFW) There are outlying facilities at the bases in Chicago Miami Nashville Raleigh/Durham as well as Los Angeles Tulsa (the main repair/overhaul facility) New York (2) and the four flight reservation centres at San Antonio Tucson Austin and Oklahoma City The size of the medical facilities vary from the DFW medical facility which consists of three doctors and 16 nurses plus a large support staff to facilities with one part time nurse

THE ROTATION AT AA MEDICAL

The rotation I undertook at AA Medical involved a general overview of the many activities carried out within the department. An initial orientation at the American Airlines Learning Centre was followed by a tour of the DFW complex. The normal working day started at 0800 with a 'Tag Up' meeting. This summarised that day's activities within the department as well as providing an opportunity to circulate news and views.

During the week there were several meetings. One was the weekly Lost Time Meeting where the department's doctors met with the Workers Compensation Board, the body that reviews and looks after employees who have received an injury on duty (IOD). The aim was to keep all involved parties informed of each employee's situation while at the same time providing the employee with some form of work within the limitations of the injury. Another meeting was the weekly Medical Review Board, providing all of the AA doctors with a forum (via conference telecom lines) to confer about problematic cases and general medical policies.

Occasional meetings were held with the Workers Accommodation Board. This is a review body that looks at individual cases. It is governed by the American with Disabilities Act (ADA) which provides defined rights to employees and those seeking employment who have pre-existing medical conditions or disabilities e.g. a wheelchair bound worker who requires modifications to the surrounding workspace.

Meetings were also held with external medical facilities which provide services to AA Medical. One facility was the Dallas Spine Centre. It provides specialised care for employees who have sustained a back injury on duty. Another was the Emergency Care Centre which provides emergency room coverage for minor trauma and illness during out-of-office hours and weekends. All major trauma immediately goes to the trauma centre based at the local hospital at any time.

The rotation also included an overview of Flight Operations, sitting in on Flight Attendant lectures including those on medical and emergency procedures, a tour of the large maintenance facility at Alliance Fort Worth airport and a Flight Simulator ride.

OCCUPATIONAL MEDICINE

AA Medical has an aggressive programme aimed at preventing work related illnesses. In addition, the Employee Assistance Program (EAP) aims to help employees and their dependants who may have personal, psychological or social difficulties.

These programmes are both aimed at illness and injury prevention. Specific parts of are:

Bloodborne Pathogens Operations — provides education and training to flight and ground personnel involved in medical emergencies. This program provides the grab and go kits used in cleaning body fluid spillages.

NASA Fatigue Countermeasures — Following research and using regimes developed by NASA, flight crews are taught about sleep loss, circadian shifting and personal countermeasures to reduce fatigue.

Repetitive Stress Injuries (Backs) — This program focuses on lifting, stretching, conditioning and work site risk assessments.

Repetitive Stress Injuries (Upper Body) — This is similar to the previous program but aimed at video display workers. This program is designed to reduce wrist, elbow, shoulder and neck injuries.

Alcohol Misuse Education and Rehabilitation — This EPA initiative provides education both to supervisors and employees. The program provides rehabilitation for employees seeking help, without prejudicing employment.

Hearing Conservation Program — Ramp and Mechanic personnel receive education, monitoring and personal protective equipment to reduce the risks of noise exposure.

Prenatal Education modules are offered in cooperation with March of Dimes, a health education charity to prevent premature births.

Breast Health Awareness — This program provides education and screening mammography to detect breast cancer at an early stage. It is run in conjunction with the Komen Foundation, a breast cancer education and research charity.

Critical Incident Stress Debriefing is provided automatically following any major incident, but is also available to employees who may have a recent traumatic event in their life such as a bereavement, rape or assault. The counselling program is aimed at reducing the development of post-traumatic stress disorder.

In addition, there is an increased awareness of the importance of HIV and AIDS and the company sponsors several local HIV/AIDS charities.

AVIATION MEDICINE

Being an airline American also requires the services of a branch of medicine specific to the industry Because of the delicate nature of work carried out throughout the airline certain safety related occupations such as flight crew drivers ramp staff and engineers come under the Department of Transportation drug (and soon alcohol) screening policies AA Medical therefore keeps track of both pre-employment and random sampling within the workforce

The medical department provides a physician on-call service During a medical incident onboard a flight it is possible for the pilot to be in direct communication with a doctor on the ground An appropriate course of action may then be decided and acted upon Information is also kept about hospitals local to airfields en route A flight may therefore be diverted or instructed to remain on course and the relevant emergency services notified A doctor may also be called prior to a flight to determine if a passenger is well enough to fly

Flight attendants are given a basic first aid course and an intensive course in emergency procedures Complementing the theory lessons the attendants undergo practical simulations including emergency evacuations over land and water Should a major incident occur within the operations centre of American Airline there is a major incident room (known as the War Room) With extensive communication relays the airline can liaise with emergency services and their own on site team This team includes medical staff at the crash site itself as well as employees known as "carers" who have been assigned to individual passengers or relatives

PROJECT

In addition to the timetabled meetings and tours I undertook a research project looking at in flight medical incidents During the 1991 1993 period American Airlines had 9232 in flight incidents ranging from nose bleeds to childbirth Using the available data the incident was categorised and the results analysed looking at incidence trend doctor (professional) attendance and O_2 usage The incidence of cases on five Fridays the 13th was also looked at The initial findings of the study are at present under review by American and may be published at a later date

EXTRACURRICULAR ACTIVITIES

Dallas and Forth Worth are not only home to the Dallas Cowboys and the Ewings but also have a wide variety of attractions ranging from the highest concentration of shops per head in the USA to the Honky Tonk Clubs such as Billy Bob's There is also a great range of food including Mextex and the good old steak (all be it of Texan proportions) A car certainly does help in getting about although there is some public transportation Accommodation varies but is quite expensive although the general cost of living is low

Downtown Dallas has several attractions including the West End and close to this area the old School Book Depository tragically associated now with the Kennedy Assassination On the sixth floor of this building is a museum and monument to the Kennedy era which gives some idea of the emotion that still surrounds this traumatic period in time

Still within Texas are the cities of Houston and San Antonio On the outskirts of Houston the largest city in Texas lies NASA's Johnson Space Centre San Antonio famous for the Alamo lies south of Dallas/Forth Worth and has an idyllic river walk and a more Mexican atmosphere In the neighbouring state of Louisiana at the mouth of the Mississippi stands New Orleans home of Jazz gumbo and a generally good time There is also some impressive scenery away from any population centre making Dallas a great location to start touring

CONCLUSION

An elective in occupational medicine and the more specialised aviation medicine provides a fascinating insight into an aspect of medicine touched upon only briefly at medical school While not mainstream medicine the specialty still uses the same principles as those in general medicine or surgery including history examination and investigation to triage technique in a major incident Summer 1994 was also an excellent time to be in the USA as the question of American taking on socialised medicine their version of a national health system was aired quite extensively Overall the elective in occupational and aviation medicine at American Airlines Medical Department, Dallas/Fort Worth was not only a highly rewarding experience but also a very enjoyable one

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ACKNOWLEDGEMENTS

I would like to take this opportunity to thank all of the staff at AA Medical, who made the time spent at the department so productive and enjoyable. In particular I would like to thank Margie Cedeck for her efforts in organising the elective and also for my introduction to Texan food and hospitality.

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Medicine and the Master's Degree in Business Administration

C M James

Abstract

This article provides a personal view of the Masters Degree in Business Administration (MBA) and its utility for a clinician. It outlines the principles behind the course and describes the details of one MBA provider, the Open Business School. Four examples are used to illustrate the value of the qualification and some conclusions are drawn as to its usefulness in modern healthcare.

WHY AN MBA?

In January 1995 the author completed a Masters Degree in Business Administration (MBA) at the Open Business School. I have been asked 'Why do an MBA?' and 'What use is it?'. This paper will try to answer these questions.

THE MASTERS DEGREE IN BUSINESS ADMINISTRATION

The MBA is a postgraduate qualification comparable in scope and academic rigor to any other Masters degree. It aims to provide a rigorous general education designed to broaden and deepen students' skills, knowledge and expertise, and is becoming an entry level requirement for higher management in the UK public and private sectors. In many ways it is becoming equivalent to MRCP or FRCS in providing a gateway to higher training, but is not viewed in itself as a guarantee of competence[1].

The degree had its origins in the USA where some of the most respected courses remain with the Harvard Business School being arguably pre-eminent. In the 1980s the holder of an MBA could expect to be in the fast lane for promotion and to receive an inflated salary. In the late 80s and early 90s there was a growing disenchantment with the MBA 'whiz kids' whose frequent lack of broad management experience and arrogant manner became a liability. Over the last two or three years the MBA has settled to become a valuable marker of attainment but not a guarantee of employment or salary.

Over the past ten years hundreds of MBA courses have been set up throughout the world

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Many are of dubious quality and the name of the institution awarding the MBA is an important factor in judging its quality. The Association of Masters of Business Administration (AMBA) is an international body that inspects courses and in deserving cases grants membership as a seal of approval. In the UK only a few courses have this distinction but this includes the Open Business School.

THE OPEN BUSINESS SCHOOL

The Open Business School (OBS) is a self financing faculty of the Open University. It draws on the OU expertise in distance learning and uses the excellent support and administration facilities of its parent organisation. In other respects it is quite independent with a body of permanent academic staff and a large network of contributors and tutors most of whom combine an academic qualification with continuing practical management experience. The OBS receives no direct government funding and must be self financing. As a consequence the course fees are much higher than for other OU courses but are reasonably priced compared to other MBA providers. An MBA will cost about £7 000 over three years.

THE COURSE

The OBS MBA has two methods of entry. The first is to complete a Diploma in Management over two or three years prior to MBA enrolment. The second, which the author used and which would be appropriate for most readers of this article, is the fast track option into a compulsory first year of foundation work that covers most of the Diploma course in a fraction of the time. Once the initial year is completed the student needs to complete four modules. Each module is equivalent to half an academic year so that two may be studied each year and the MBA completed in three years. Alternatively modules may be taken at the rate of one a year and a year or two can be taken out so that an MBA course can be spread over six years.

There is one compulsory module in Strategic Management and a range of optional specialist modules including Creative Management, Management in a Competitive Environment, Managing Public Services, Human Resource Management and Performance Assessment.

In the tradition of OU courses the modules comprise a combination of specifically written course material commissioned and abstracted background reading and a few general and specialised management texts. There is also material provided on audio and video tape as well as some computer aided learning packages. Software is provided to allow access to the OU conferencing system (COSY). COSY has module specific and general conferencing facilities which provide an opportunity for discussion and mutual support. Some modules use COSY as an integral part of the course. The student is guided through the module by a detailed timetable and a personal tutor. Five or six tutorials take place on Saturday mornings or weekday evenings during the course. Each module has a residential school of between three and six days duration. These take place either in corporate conference centres or in conference centres attached to Universities. These schools are compulsory hard work and enormous fun with some hectic socialising.

Assessment is by tutor marked assignments between four and eight in each module and by an end of year written examination. On average about 10% of students will fail a module and 3% obtain distinction level passes. The dropout rate is not publicised but may amount to 15%. Dropouts usually occur because of pressure of work.

There is no doubt that the MBA course is demanding and that it severely impinges on leisure time and other commitments. The tutor marked assessments are linked to the course material and it is consequently not possible to fall behind the pace of the course and catch up at the end. On average one can expect to commit 10 hours per week to the MBA. This becomes a major problem during summer leave which always seems to coincide with deadlines.

WHY DO AN MBA?

Most of those on an OBS MBA course will be doing it to improve their employment or promotion prospects. The majority are self funded although a substantial minority are sponsored by their employers. A few are employed by organisations that routinely put middle managers through an MBA as part of their continuing management training.

My single most important reason for doing an MBA was a belief strengthened as the course went on that general management theory and practice had great relevance to the challenges in health care. The combination of clinical (medical nursing dental etc.) experience and

management training should produce senior managers who can earn the respect of both clinical and managerial staff and who can make decisions illuminated by a proper understanding of all aspects of a health care organisation

I am a supporter of the divisionalised structure introduced into some Trust Hospitals In this organisation each clinical division is headed by a clinical director working in close conjunction with a business manager It is essential that the clinical director maintains some clinical work so as to continue to bridge the clinical/management divide The Management Board then comprises the clinical directors together with the Chief Executive Medical Director and the management team In my view the ideal Chief Executive should have a clinical background and the overall direction of the organisation should be in the hands of the clinical representatives The non-clinical management team then act as an executive supporting the strategic decisions of the board and carrying out their various specialist technical functions in achieving agreed objectives For this system to work I see it as mandatory for the clinical and medical directors and the Chief Executive to have had formal management training to an MBA or equivalent standard It is clear from my experience and that of the other doctors nurses and dentists who have obtained an MBA that it is quite possible to combine clinical and managerial accomplishments and qualifications but it seems unlikely that many health service senior managers will spend six years obtaining a medical qualification

Management is not difficult but it does need to be taught tested and practised In common with medicine theory is no substitute for experience but trying to gain experience without a strong theoretical grounding can be unwise

WHAT DOES IT TEACH YOU?

Rather than trying the impossible task of summarising three years work I will try and bring out some key points

Management Speak Jargon is encountered everywhere and management literature has followed medicine s lead by creating a lingua franca that acts both as a form of shorthand and as a means of mystifying the straight forward An MBA teaches the jargon and allows one to cut through the c*** to what is often a statement of the obvious On the other hand it is useful to be able to communicate in the language of management both to reduce error and to demonstrate a grasp of the rules of the game Much of the poor reputation of management amongst healthcare staff stems from the use of the new language

Carry out a SWOT or better still an Ansoff matrix as part of your business plan not forgetting the STEP factors and make sure that it is congruent with our mission statement goals and objectives This needs to be supported by a DCF for investment appraisal

This can be translated as

Look where the organisation wants to be in the future and determine how your unit will get there taking into account all relevant factors both within and outside the organisation Show how much this will cost

Wide Vision The MBA teaches that every organisation whatever its nature exists within a wider environment of Social Technological Economic and Political factors In addition every organisation interacts with individuals and groups who have an interest or stake in it An awareness of the environment and of the needs aspirations and intentions of the Stakeholders is crucial for survival let alone success Advantage can be gained or potential disadvantage avoided by forecasting environmental change and positioning the organisation appropriately In my view the medical profession in the NHS and the DMS have failed to understand the predominantly political drivers of change and have consequently been left in a reactive and defensive posture Everyone has a view on how the future might shape our personal and professional lives The MBA provides a framework for organisational forecasting analysis and action

Problem What Problem? Problems frequently arise in management that seem intractably difficult In the public sector the multiplicity of stakeholders and the complexity of the operating environment exacerbates even simple problems It is tempting either to abandon the problem as too difficult or to make an expedient compromise decision without proper thought to long term consequences In the Armed Services and other public services this latter approach is tacitly encouraged by the short period of

appointments in strategic planning positions and the consequent short personal planning horizon. There is a vast management literature for both private and public sectors based on theory and experience. Techniques and approaches have been proposed and used in a variety of complex problems. No one single technique is a universal panacea despite what the management gurus might claim however a manager does have an extensive toolbox from which to select an approach to the problem. The professional manager like the hospital consultant must know and understand the literature.

The Market — Right or Wrong? The hallmark of the last 15 years of Government has been the introduction of market discipline to public sector organisations. This ranges from whole-scale privatisation as for British Airways and British Telecom through privatisation with regulation for the utilities to the creation of a pseudo-market in health. What is so special about a market? Economic theorists propose that any civilised society is trying to move towards an optimal condition where no re-distribution of wealth would increase overall benefit. This is not the same as a communist society with all wealth evenly spread. In the optimal state there would still be rich and poor but no movement of wealth from the rich to the poor would lead to an overall increase in optimality. It is suggested that a market system is one way to move towards this optimal state. A market is defined as a system where benefits (which include goods and services) are traded using price as a mechanism. Supply should meet demand at a price that reflects the balance between maximum profit for the supplier and maximum perceived utility for the price paid by the purchaser. Unfortunately the conditions that need to exist for a market to work perfectly are never likely to be achieved. From the perspective of healthcare the most important proviso for a perfect market is that purchasers should be able to attain perfect knowledge about their purchase.

If you want to buy paperclips (as a trivial example) then you can obtain considerable knowledge about their characteristics before you buy. You might have previous experience of paperclip purchase, you can attend meetings of paperclip purchasing executives, you can read *What Paperclip*, you might even take comfort in consumer legislation that protects your rights if you buy poor quality paperclips. In short your final decision on the price/benefit balance will be well informed. Contrast the situation when you consult your doctor. A diagnosis is reached and treatment proposed. In a private system a fee will be proposed. How does the consumer judge the quality of the diagnosis, the appropriateness of the treatment, the expertise of the practitioner or the fairness of the price? When it is one's own health at stake can one risk the cheap and cheerful chap down the road or should one pay the higher fee for the man with silver hair and a Rolls Royce? How does one know when one has made the wrong purchasing decision and how does one get redress? This differential information where the purchaser is unable to enter into the transaction with perfect knowledge is an anathema to a market system. The development of the medical profession, its training, its self regulation and its complex informal agreements on advertising, charging and professional etiquette have all been driven by the need for society to trust their doctors. In a fully private system professional self regulation can generally avoid the suppliers (doctors) taking advantage of their customers (patients) by providing poor quality service at exorbitant cost. In a system such as the NHS where the service is free at point of use the situation is subtly altered. As no fee is involved there is no concern about over-charging however the patient now must worry that the treatment proposed is in fact the best and most appropriate for their problem and that the doctor is not limited by funding constraints. Herein lies the problem with a market approach to health care. In the first place the patient is not well enough informed to make a choice about where to go with his problem so he must trust his local GP or hospital. Secondly he is not well enough informed to decide whether the treatment proposed is the best available or whether his doctor is incompetent, ill trained or poorly funded. Third, he has little opportunity for redress if things go wrong with very limited ability to take his business elsewhere. In the current pseudo market system there will be winners and losers. Some hospitals will attract patients, funding, staff and plaudits. Others will fall by the wayside. It is presumably just bad luck if your hospital happens to be failing when you need it!

WHY DO IT?

Medicine happily accepts that there are some doctors who have the intellect attributes talents and energy to pursue research there are others who have the gift of teaching and more whose entire satisfaction is gained from clinical work There is also a growing minority who have the ambition to fulfil managerial roles In the past doctors have taken on managerial responsibilities without any consideration as to their suitability for the task and without any proper training in the subject As a consequence these medical managers have struggled to combine their clinical and managerial responsibilities and have been easy prey for the macho manager There is no doubt that good business practice is here to stay in healthcare whatever the political administration Given the amount of taxpayer's money that is involved in health provision it is impossible to argue against the notion that resources should be used effectively efficiently and economically This mandates a business like approach In my opinion the medical profession has been guilty of avoiding this inevitable change of emphasis and its unwillingness to address this problem has resulted in the burgeoning administrative cadre in the NHS and the undesirable move from the professional towards the managerial culture I am convinced that this trend must be reversed and that this can only be achieved by clinical staff attaining positions of managerial responsibility

IN CONCLUSION

I am delighted to have obtained my MBA Although the path was long and often steep I have gained a greater understanding of business politics healthcare and management In many respects I have had my eyes opened to the wider issues and complexities of the world in which we live As an educational experience it has been very fulfilling As a TLA on my letterhead and in my CV only time will tell whether it has been cost-effective I would heartily recommend it to any doctor dentist nurse or MS officer who has an interest in or ambitions towards management The advent of a Secondary Care Agency may well place a greater emphasis on professional business methods in the DMS and in common with our NHS colleagues we may find that we are all managers now

ABSTRACT

Morrison A D, Sanderson R C, Moos K F The use of Silastic as an orbital implant for reconstruction of orbital wall defects Review of 311 cases treated over 20 years *J Oral Maxillofac Surg* 1995 **53** 412-417

Purpose A retrospective review of silicone rubber (Silastic Dow Corning Midland MI) implants placed in orbits was undertaken These implants were used to reconstruct defects in the orbital floor and/or walls secondary to trauma or those created during malar or orbital osteotomies The purpose of the study was to determine the incidence of removal of these implants from the surgical site

Materials and Methods The records of 311 patients treated over a 20 year period were reviewed Of these 302 had received silastic implants secondary to trauma

Results Forty one patients (13%) had their implant removed at a second operation The reasons for removal included infection migration of the implant worsening eye signs such as diplopia and others

Conclusion Because there was a clinically significant rate of removal of this material consideration should be given to the use of other available materials

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History

The battle for Port-en-Bessin 6-8 June 1944: A Medical Officer with a Royal Marine Commando

J O Forfar

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INTRODUCTION

In his book *Corps Commander* describing the Normandy campaign General Sir Brian Horrocks tells how when he arrived in France eight weeks after D Day to take command of XXX Corps General Dempsey the Army Commander in briefing him on the events of that day said 'When all did so well it is rather invidious to pick out anyone for special mention but the two outstanding examples of initiative and the value of tough individual training were on my right and left flanks carried out by 47 Royal Marine Commando and the 6th Airborne Division respectively' Sir Robert Bruce Lockhart the Director General of the Political Warfare Executive during the war described 47 RMCdo's performance in the invasion of Europe as 'the most spectacular of all Commando exploits during the actual invasion' [2]

The D Day objective allocated to 47 RMCdo was Port en Bessin (*Figure 1*) the small cliff flanked port sited on the 12 miles of rocky coastline itself unsuitable for landing between the right of the British Army landing on Gold Beach (Arromanches) and the left of the American Army landing on Omaha Beach (near Colleville) General Horrocks went on to describe what General Dempsey told him

The capture of Port-en Bessin had been vital for two reasons firstly it formed a junction point between the British right flank of Gold Beach and the American V Corps landing on Omaha secondly it was essential as the main terminal for our petrol supplies petrol being the life blood of a modern mechanised army The Germans had turned the place into a veritable fortress dominated by two high hills one on either side honeycombed with trenches To all intents and purposes it was impregnable by any attack launched from the sea So it was decided to land the 47th Royal Marine Commando (420 men commanded by Colonel Phillips) on Gold Beach after it had been recaptured They would then move across country and attack and capture Port en Bessin from the rear

But far from its being the peaceful landing which had been expected while some distance from the beach they had come under heavy fire some landing craft were sunk and many Marines had to swim ashore losing all their arms and equipment in the process They were also scattered along the beach and it took Colonel Phillips several hours to collect them So instead of a fresh fully armed unit he had a force of tired wet bedraggled men many of whom were without some garment or other — quite a number had no boots and others had lost their trousers Sixty men had been killed or wounded and only half of the force which remained was still armed It would be difficult to imagine a worse start to an extremely hazardous operation which involved a 15 mile march across enemy occupied territory But undaunted they set off with the armed Marines in front They came across numerous German defensive positions each of which they attacked and overran capturing the weapons for their own use Thus by the time that they arrived close to the port many were equipped with German arms Their first objective was one of the strongly

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occupied hills but by now the men were pretty exhausted which was hardly surprising after their extremely rough crossing and their swimming ashore followed by a strenuous cross country march and a series of small but fierce engagements They were therefore given a two hour rest whilst a patrol was sent off to try and contact the Americans who were to supply the artillery support for the attack on the town But the US forces had also had difficulty in landing and no artillery support was forthcoming To make matters worse none of their wireless sets would work and as they were completely cut off from all Allied forces the situation must have seemed pretty desperate

However they managed to get one set working and made contact with the Navy who promised naval gunfire support and low flying attacks from the air Both these took place that afternoon and the Marines launched their attack on the town clearing it house by house but the Germans counter attacked and overran their rear Administration HQ which was very sparsely protected as they could not afford to leave more men in a purely defensive role Nevertheless they went straight on and cleared the town but Port en Bessin could not be held until the two high hills on either side had been captured Their attack on the first was beaten back They then made two further unsuccessful attempts to capture the second all the time suffering heavy casualties A young captain called Cousins who had taken part in the unsuccessful attempts to capture the second hill had noticed a zigzag path leading to the top which seemed to be undefended When it was dark he collected every available man and made a last desperate attack up the path This time they were successful although Cousins was killed by a grenade just as they reached the top But with one of the hills in their possession as so often happens in war the German defences suddenly collapsed and the Commando held Port en Bessin for two days until they were relieved It is doubtful whether in their long and distinguished history the Marines have ever achieved anything finer

TRAINING

Earmarked for the Second Front 47 RMCdo had been formed nearly a year previously Much of its training had been carried out in Scotland at the Commando Training Centre based at Achnacarry Castle, the home of Cameron of Lochiel also in Ardnamurchan Argyll and in the Isle of Wight the latter previously occupied by many of the units who had taken part in the ill-fated Dieppe raid The training was rigorous It was based on a document entitled The Hardening of Commando Troops for Warfare This emphasised subjects such as resistance to fatigue and exposure mental attitudes long distance and speed marching pack carrying techniques appropriate diet and the risks of salt deprivation associated with severe exertion All members of the unit no matter what their rank or duties had to undergo this training Those who could not match up to the standards required or who asked to withdraw were posted away from the unit The commando medical officer with the advantage that he too had to undergo all the physical training had an important role in enabling troops who were anxious to succeed to do so and in recognising those who were physically or psychologically unsuitable for it

Although the marines are traditionally served by medical officers from the Royal Navy too few of the latter were prepared to volunteer for the foot slogging and land operations which commando service demanded The Royal Marines had therefore turned to the Army and the Royal Army Medical Corps for help The medical establishment of 47 RMCdo thus consisted of one captain RAMC one sergeant RAMC and nine medical orderly/stretcher bearers (six lance corporals RAMC one private RAMC and two marines trained in basic first aid) plus one MOA (marine officer s attendant i e the batman to the medical officer) Each of the fighting troops A B Q X Y and HW (heavy weapons) had one of the lance corporal medical orderly/stretcher bearers attached to it and the remainder constituted the HQ section which was normally responsible for manning the RAP (regimental aid post) The training of the unit medical personnel emphasised medical reconnaissance i e the search for casualties and for suitable places in which to treat them rescue techniques the carriage of men with injuries both with and without stretchers first aid particularly control of bleeding use of the first field dressing and bandages recognition and management of fractures improvisation when the amount of medical equipment was limited e g using a rifle as a splint the psychological handling of injured men

Although a number of individual members of the unit had been detached to participate in raids on the Norwegian coast the commando as a unit had not previously been in action

EMBARKATION AND CROSS CHANNEL VOYAGE

Prior to D Day the commando was incarcerated for a week for security reasons in a marshalling area at Southampton Two days before embarking a marine reported with florid measles Bearing in mind the congested accommodation in which the troops were living this raised the

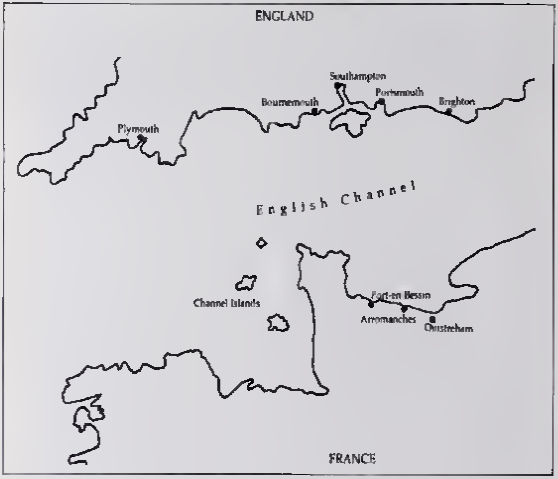

Figure 1 Port-en Bessin in relation to Southampton- port of embarkation

disturbing prospect that some of them might be assailed at a particularly inappropriate time by a viral as well as a human enemy To avoid any alarm it appeared that the less said the better and one case of PUO to his grave disappointment was discharged from the marshalling area Fortunately no further cases occurred

Embarkation took place on 3rd June An order was issued later in the day that as the troops moved through the streets of Southampton they were on no account to comment to the bystanders as some earlier in the day had done that this is it The bystanders looked on with sober interest

At the last minute there was a redistribution of troops between the two ships on which the commandos would sail and most of the medical personnel were transferred from the *Princess Josephine Charlotte* a cross Channel ferry manned by the Royal Navy to an old and smaller tramp steamer the SS *Victoria* manned by merchant seamen Both ships had been converted to carry landing craft assault (LCA) These flat bottomed shallow-draught craft with a hinged ramp at the front were manned by the Royal Navy and carried 35 men

After a frustrating day s postponement due to bad weather the commandos set sail on the evening of 5th June As the SS *Victoria* headed southwards through the Solent in the gathering dusk only the droning of planes overhead and the swish of the ship s movement through the water disturbed the throb of its engines Below deck the final briefing of the troops and a careful somewhat anxious re examination of weapons and equipment was taking place There was a feeling of relief that at last the months of training and waiting were over and a certain amount of

somewhat forced badinage but there must have been few who did not harbour a measure of apprehension an undeclared concern that they would not match up to what lay ahead Soon for those prone to sea sickness the open sea still rough from the previous day s storm was taking its toll and for them the Navy s bags vomit were the major preoccupation

The merchant seamen crew of the SS *Victoria* mostly older men including some who had earlier survived torpedoing with loss of their ships displayed a paternal concern for their young passengers To men not usually noted for restrained language their subdued conversation revealed the sombre realism with which they viewed the prospect before their charges

Later as the night wore on the guns of a nearby cruiser the *Orion* bombarding the French coast began to disturb the peace of the night and the early dawn Morning after a fitful hour or two of bedless sleep revealed the enemy coast as a low grey line eight miles ahead It was 0500 hours

THE LANDING

The SS *Victoria* with the *Princess Josephine Charlotte* nearby hove to and waited Soon the LCAs of the Hampshire Regiment the first to go ashore in this sector could be seen leaving their parent ships and heading for the coast By 0730 hours the LCAs of the SS *Victoria* had been swung out on their davits and the commandos were going through the launching routine On this occasion some of the LCAs were filled at deck level and lowered loaded into the water some by the more usual route of a scrambling net descent down the ship's side into LCAs already lowered By 0800 hours six LCAs from the SS *Victoria* and eight from the *Princess Josephine Charlotte* were on their way

The naval personnel manning the LCAs went about their business the marines sat crowded round the periphery of the LCA beneath the protective overhanging gunwales or amidships saying little and seeing little

The officers stood forward scanning the sea and landscape ahead Behind like a symbolic life line to the parent ship the wake of the LCA stretched back to the ever diminishing outline of the SS *Victoria* As the light improved and the off shore distance shortened the grey line of the coast began to transform into individual green fields and white coated houses A shaft of sunshine focused on a cluster of houses and a church on the coast ahead Away to the right the cliffs flanking the harbour at Port-en Bessin were just visible Because of the impregnability of these cliffs to frontal assault the plan was to land at Le Hamel some 10 miles to the east of the port cut inland circle round and attack the port from the landward side There was as yet little sign of enemy activity As the engines of the LCA purred and the craft rose and fell to the swell the morning seemed strangely ominously peaceful

The LCAs were now just over a mile from the shore and the scene was changing A battery on the high ground above Le Hamel was ranging on the approaching LCAs Spouts of water from exploding shells began to dot the stretch of sea between the LCAs and the coast One LCA carrying half of Y Troop including its troop commander and the commando adjutant was hit As it sank some of its occupants were jumping into the water Others in the LCA had been killed injured or drowned One of the lance corporal medical orderlies was lost There were to be no rescues by incoming craft — to have stopped would have disrupted the timed landing schedules made the incoming craft easier targets and obstructed the paths of following craft

As the commando approached the beach on which it was planned to land and which should already have been in the hands of the first wave of troops the beach was seen to be deserted except for two stranded motionless tanks one with its gun forlornly depressed the other ablaze There were no landing craft on the beach This beach would still have to be captured but the commando s role was not to fight on the beaches but to move inland from a captured beach in as intact a formation as possible A lateral eastward traverse had to be made although this would increase the length of the cross country march to Port-en Bessin As the flotilla of LCAs ran parallel to the coast one struck a mine The bows were blown off and most of Q troop were left struggling in the water The troop commander Major Peacey and a number of others were killed The remaining 12 LCAs somewhat dispersed now came opposite a beach on which a landing had been achieved although the beach had not yet been fully secured The LCAs turned shorewards Our LCA passed close to a sunken amphibious tank the top of whose turret was just exposed in the trough of each passing wave Clinging to the exhaust pipe (extended upwards as part of the waterproofing of the tank) was a solitary soldier still wearing his steel helmet and equipment shouting for help Each wave threatened to engulf him and sweep him off the tank We passed him by

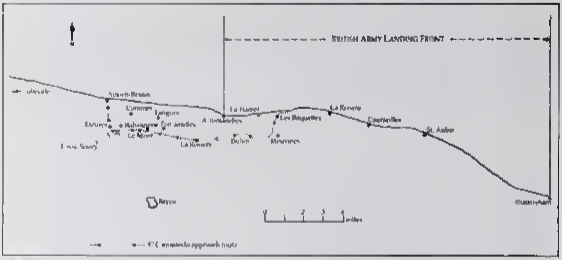

Fig. 1 The route to Port en-Bessin from the landing at Les Roquettes

We were now close to a group of incoming landing craft tanks (LCTs). Ahead the landing beach began to reveal itself as a congested jumble of landing craft disembarking troops and vehicles. A naval ratings in the prow of our LCA was getting ready to lower the landing ramp. For our LCA that much desired beginning for all such operations a dry landing appeared in prospect. But it was not to be. A hundred yards or so out one of the underwater mine tipped tetrahedra which Rommel had had planted as the outmost reach of his Western Wall for just such an eventuality took its toll. Too late the dark shape below the water's surface was seen. The avoiding lurch to port was unavailing: the LCA jarred, emitting a low pitched grinding noise as it scored along the obstruction and tipped to the left, nose down, impaled on the tetrahedron. There was a short delay but the thought that the tetrahedron might not be mined was promptly banished by an underwater explosion which blew off the stern of the LCA. The stricken remnant of the craft sank and again heavily laden troops were left struggling in the water out of their depth. Fortunately most were still wearing their Mae West lifebelts. In the rear of the craft, Marine Kinloch, another of the medical orderly/stretcher bearers had been killed by the explosion of the mine. The strength of the medical orderly/stretcher bearers had been reduced by over 20 per cent even before landing. As our LCA sank to the bottom another LCA close by struck a mine and suffered the same fate.

My concern, apart from survival, was to retain the rucksack of medical equipment which I carried. This was heavy but weighed less than the 40 kilogramme packs which some of the marines carried. Much thought had gone into its contents — field dressings, morphia, simple surgical instruments such as artery forceps and scissors, sutures, antiseptics, Cramer wire splinting, medications for our own troops and for the French population whom we had been told we might have to treat. The rucksack, quickly unshouldered, did not immediately sink, but floated, iceberg like, with the tip above the surface of the water. It seemed that I would manage to push it ashore as I swam but as the rucksack became progressively waterlogged and sank lower and lower in the water it was clear that this was to be a race against time. Breast stroke by an indifferent swimmer whose hands alternate between swimming movements and pushing a waterlogged rucksack, whose leg movements are hindered by army boots, whose rate of progress through the water is reduced by the wearing of battledress and webbing to which is attached a .45 automatic, is hardly conducive to speedy swimming. The race was lost. Half way to the shore the amount of rucksack projecting from the water was barely breaking the surface and soon a trail of bubbles leading downwards in ever diminishing size marked the course of the rucksack and its contents to the sandy bottom below.

At the same time another hazard became evident. The large incoming LCTs, while ominously visible to those in the water were unlikely easily to see the bobbing heads of the latter. Fortunately the LCTs passed to our left

but as they did so bullets could be heard rattling against their starboard sides Such logical deduction as was possible under the circumstances indicated that the bullets must be passing over our heads At last groping feet touched the bottom and at an individual level the D Day landing had begun It was 0920 hours Five of the 14 LCAs which had set out had been lost in the run in seven others had been damaged and only two were fit to return to the parent ships

My first casualty was at the water s edge an injured and apparently drowned soldier pulled out of the water by my MOA Marine (later Corporal) Pymm In a six month house officer post between qualifying and joining the Army I had fortunately agreed to lecture to a railwaymen s first aid class and to enable me to do this had studied the Red Cross First Aid manual including the Schafer method of artificial respiration then in vogue The undergraduate curriculum had taught me nothing of this Another bonus of this association with the first aid railwaymen was that they engaged in interdepot bandaging competitions and were very skilled at bandaging techniques appropriate for various parts of the body In this field it was they who had taught me I had never applied the Schafer method to a real patient before and to my surprise and satisfaction the emergence of water and froth from the drowned soldier s mouth in response to the Schafer manoeuvres was followed by some movement in his apparently lifeless limbs he began to cough and vomit and then to make spontaneous respiratory movements We carried him up the beach and handed him over to a beach party

The depleted commando was now scattered along nearly a mile of beach rather than the 200 yards intended Much of its weaponry and equipment was missing The swimmers were cold and wet The packing of the emergency chocolate ration had proved inequal to the task of protecting against immersion The battledress pocket in which it was carried had become a sticky gluey mess with chocolate extruding from the pocket The bootless and trouserless to whom General Horrocks referred were some who wearing the shore and under orders had discarded their Mae Wests before the LCAs were mined and sank An inflated Mae West is a restriction and encumbrance to a soldier wearing all his equipment and carrying a rifle who is trying to disembark quickly under fire through the narrow exit of a crowded landing craft to the same soldier struggling in the water in boots battledress and equipment the Mae West is a life saver It was easy to misjudge the critical moment at which the order should be given for Mae Wests to be discarded and inevitably some officers got it wrong

The beach progressively narrowing due to the incoming tide was a mass of ammunition boxes all kinds of equipment creaking vehicles Bren gun carriers a few clanking tanks shouting men and churned up sand Tanks were coming ashore and manoeuvring towards the beach exits There were occasional bursts of shooting but it was not clear from where these were coming or at whom they were aimed Rank and purpose were difficult to identify A brigadier lying on the sand beside the sea wall was giving orders into his wireless set Nearby the crew of a Bren gun carrier were sitting calmly in their vehicle awaiting orders and listening on their wireless to the BBC announcing the opening of the Second Front Shepherded by a solitary soldier a few prisoners their field grey arms held high were being hustled unceremoniously to the beach Apart from that the enemy s presence was unseen but it was felt Mortar bombs were falling just short of the beach on the other side of the sea wall and the adjacent road running alongside it In the field on the other side of the road was a warning sign displaying a skull with Achtung Minen below it We had been informed that many of these signs were bogus but the presence of two bloated cow carcasses seemed to cast doubt on such an assumption and a flail tank promptly confirmed the doubt As the flail tank its rotating flails outrigged in front rumbled landward across the field one of its flails exploded an anti tank mine The chain flail was blown high in the air and landed nearby The tank rumbled on Troops were moving off along the road parallel to the beach and were suffering casualties as a result of mines Casualties were being collected at a beach dressing station

Slowly a motley collection of somewhat bedraggled marines gathered below the sea wall under the command of the second in command Major Donnell At this time the CO (Lieutenant Colonel Phillips — later General Sir Farndale Phillips) the adjutant two of the six troop commanders and 70 more officers and other ranks were missing of these 15 were known to have been killed and 10 wounded In accordance with instructions those who had been rescued had been picked up by craft or ships returning from the shore and taken back to England It was not known how many had been taken back in this way Few of the marines who reached the shore from the five landing craft which had been sunk

possessed any weapons Most of the Bangalore torpedoes (for blowing gaps in barbed wire and other obstructions) had been lost and the only three inch mortar which had been landed had lost its sight The spirits were raised by the arrival of the padre the Reverend Reginald Haw looking very spruce Chuffed at being one of the few to land dry he explained that one baptism a day was enough for any chaplain and that as he had started the day with a baptism of fire there had been no need for him to engage in any further rites

THE APPROACH MARCH (*Figure 2*)

Major Donnell satisfied that he could wait no longer for scattered remnants of the commando to appear decided to set off It was just after noon Very little seemed to be going right The planned commando rendezvous was the church at Le Hamel and with mortar bombs falling here and there the commando proceeded towards it along the road beside the sea wall Le Hamel however was still in enemy hands and the leading army troops were heavily involved in attempting to clear it At this stage in the operation concealment not confrontation with the enemy was 47 RMCdo s role its orders being to reach Port en Bessin 12 miles away in as full fighting order as possible It therefore turned inland Moving through the coastal minefields and proceeding as unobtrusively as possible it reached the Meanvines-Bayot road inland from the enemy front line Shortly thereafter Colonel Phillips rejoined the commando He had been cut off beyond Le Hamel but had managed to come through the village although it was occupied by the enemy

The early progress of the depleted force as it proceeded along side roads and farm tracks was encouraging Moving as unobtrusively as possible in enemy occupied territory is a strange experience It engenders intense concentration and vigilance Every tree or animal that moves every fold in the ground or bend in the road every copse or culvert every shadow every sound tends to assume an ominous significance a perceived danger unless positively proved otherwise

The first direct encounter was close to where the HQ medical section was moving As the commando proceeded in file along a sunken road three German soldiers one carrying a sub machine gun the others rifles appeared over the brow of a field sloping down to the road The marines froze and the Germans walked on weapons still slung unaware of the danger ahead in the form of several unseen rifles trained on them The man carrying the sub machine gun apparently suddenly sensed danger He stopped and began to unsling his sub-machine gun Several shots rang out and he fell his sub machine gun dropping with him His companions hopelessly exposed promptly dropped their weapons and put their hands up The seriously injured machine gunner staggered down to the road and collapsed at the roadside He had been hit several times in the abdomen As I examined him he kept muttering Kaput Kaput and apparently seeking sympathy or possibly fearful of what his captors might do, fumblingly produced from his tunic his field pocketbook showing me within it a photograph of his wife and two children There was little I could do for him other than try to refute without any inner conviction his own fatalistic prognosis The commando was on the move again Looking back a pathetic figure was slouched at the roadside clutching the photograph of the wife and children he would probably never see again

Our two prisoners had to be taken with us and one was offered to me for non combatant duties Our captive was more than willing to oblige It was surprising how many stretchers (light airborne type) this frightened but surprisingly jolly man relieved that he had escaped the fate of his companion was anxious to carry and how ready the erstwhile bearers of these stretchers were to accommodate his enthusiasm!

At one point a German probably an officer was seen riding a horse He appeared to be approaching the column then turned away Could it be that he had seen the column? The risk that he had done so could not be ignored and his fate was sealed A single shot rang out and he fell from the saddle The horse stopped apparently mystified by the unusual behaviour of its rider hesitated looked at the motionless form of its erstwhile master and turned aimlessly away

As the column moved ahead bursts of firing meant that the leading troops had met with resistance The most serious encounter was near La Rosiere less than half way to Port en Bessin The D Day plan was that the army would already have captured La Rosiere before 47 RMCdo reached it and that the commando would be on its own beyond that But La Rosiere was occupied by the enemy and had to be captured if the commando was to proceed Under fire A troop had to deploy to a flank to take a machine gun post and X troop had to fight through the

village As Q troop with the regimental aid post (RAF) group just behind crossed a gap in a hedge in single file during these deployments a machine gun opened up on the gap Eight marines were wounded two seriously Seven of the wounded men moved quickly out of the gap but one of them Marine Fussell lay where he had fallen Examination — with the uncomfortable feeling that some unseen marksman had one in his sights — showed that he had been hit in the spine and his legs were paralysed There was no nearby accommodation and so he was left with some of his wounded companions with instructions regarding handling (he was later rescued by the Army)

In a column moving surreptitiously across country one sees little of one s companions except the few in front and the few behind If troops sustain casualties the troop medical orderly is likely to be on the scene The doc has to catch up with the wounded alerted by a process of word passing For casualties unable to continue field dressings and the nearest house reached by stretcher if necessary with the hope that the house was in French occupancy were usually the best that could be done Walking wounded after being treated had to make their owa way back to the beachhead as best they could Despite the risks the French took to helping British troops the farmhouses or cottages readily admitted wounded marines For the medical officer with a column on the march the dilemma is that he must not lose touch with the column yet has to spend time treating and trying to make some sort of arrangement for the care and evacuation of the wounded who can no longer proceed In this operation the unplanned absence of a heavy pack did have its advantages — in catching up with the column

In these encounters with the enemy a number of German weapons were captured which in view of the commando s own depleted weaponry were put to good use They also provided excellent auditory camouflage because the characteristic sound of for instance the German schmeisser or spandau fired by our own men created confusion in the mind of the enemy as to who we were The spanda s rate of fire was more than twice that of its British counterpart the Bren gun

At La Rosiere the commando halted It was now 1530 hrs Since leaving the beachhead one marine had been killed by an unseen sniper and 12 wounded Snipers were a problem with officers as the main target As anyone carrying a pistol rather than a rifle or Tommy gun was likely to be identified as an officer most of the officers were discretely carrying rifles or Tommy guns — scant solace for the medical officer who was precluded from carrying such offensive weapons but had an automatic pistol for self defence Twenty prisoners had been taken on the approach to and occupation of La Rosiere They including our volunteer stretcher bearer were handed over to an army unit the forward elements of which now appeared on the scene

At La Rosiere the commando now numbering 360 — a few stragglers had caught up with it — regrouped and redeployed Colonel Phillips held an 'O (officer) group meeting under a tree The remainder of the commando lay quietly under hedges or in ditches ever alert The sun was going down and in contrast to the recent rattle of automatic weapons birds were singing and the countryside seemed very peaceful The commando moved off again at 1945 hours routed across country to preserve concealment The objective was the Point 72 ridge named after the highest point on an east west ridge one and a half miles south of Port-en Bessin

Shortly after restarting the commando encountered a German regimental sergeant major cycling unarmed along a side road He seemed strangely unconcerned at being captured declaring in a tone of injured innocence that he was only on his way to see his girlfriend who was to be found in a brothel in Ouistreham (which was 12 miles away) Closer questioning revealed that this was to be his final visit to the girlfriend and that he planned then to give himself up as he had had enough of war Sadly 47 RMCdo deprived him of fulfilment of his first objective but did not deprive him of his second Corporal Terry an Austrian serving in the British army and attached to 47 RMCdo who captured and interrogated the German RSM was later himself wounded and evacuated to the beachhead There he saw again his erstwhile captive — now complaining bitterly not about the interference with his sex life but about such mundane matters as sanitary facilities and food

Apart from exchanges of shots with isolated groups of enemy on two occasions there were no further serious incidents during the journey Much of this part was over fields in single file and latterly in growing darkness For most darkness in these circumstances provides comforting cover although some feel darkness oppressive and dangerous and prefer daylight whatever the circumstances The very limited vision in the dark does create navigational difficulties for a column moving in single file

Concentration on the silhouette and sound of the man in front becomes intense If you lose him you will find yourself the inadvertent probably ill qualified and almost certainly unappreciated leader of the remainder of the column

The Point 72 ridge proved to be unoccupied The west end was close to and just south of the village of Escures from which the main road ran north to Port en Bessin one mile away The troops although tired had to dig in along the ridge to provide defence and a base from which Port en Bessin would be attacked next day They had little chance to rest Near Escures was a concrete bunker which was a German strong point fortunately occupied only at this time by a German naval medical officer and two wounded German soldiers All three plus another captured German soldier were incarcerated in the rear section of the bunker as it was important that they should not escape to give away the Commando's whereabouts I established the RAP in the front section of the bunker The German medical officer revealed himself as an ardent Nazi He objected to his confinement with other ranks complaining that he was not being accorded the privileges of an officer He also assured me — not without some justification as it transpired — that there were strong German forces nearby and that shortly the position would be reversed and we would be the prisoners During what remained of the night a seriously wounded German was brought in but died shortly thereafter

THE ATTACK ON THE PORT (*Figure 3*)

The morning of 7th June as dawn broke saw the commando getting ready to attack Port en Bessin and the medical staff both those in the RAP and the medical orderlies/stretcher bearers in the individual troops making preparations for their supporting tasks No counter attack had occurred during the night although there had been some desultory shooting Colonel Phillips despatched the German naval medical officer with a speculative note to the Port en Bessin commander demanding the surrender of the port The medical officer was not seen again nor was any answer to the note forthcoming Lack of adequate wireless communication was a serious drawback creating delay The attack on Port en Bessin was to have been supported by American artillery but no contact with the Americans was possible and in any case the units concerned were themselves in difficulty at Omaha beach Fortunately by mid morning one of the wireless sets was repaired to the extent that contact was made with the nearest British army brigade (231 Brigade) and through it with the Navy The reserves of ammunition in four Bren gun carriers under Lieutenant Bennett which were to find their way independently to Port en Bessin had not yet arrived — as the commando was travelling on foot all other supplies had to be carried In the meantime two young Frenchmen appeared and eagerly joined the commando providing valuable information about the defences of the port and the deployment of troops in and around it As later events tragically proved however they were not fully informed of all the enemy dispositions

The harbour at Port en-Bessin consists of a north facing outer harbour created by two bow shaped sea walls projecting seaward with the harbour entrance midway between their ends and connected to the outer harbour a 500 yard long inner harbour consisting of two elongated basins running inland (southward) in line The inner harbour constituted a barrier to troops moving east to west or vice versa across the town as the only bridge over the inner harbour had been withdrawn necessitating a detour round the inner harbour's southern end Basically the defences of Port-en Bessin were in a triangle On each side of the harbour were the Eastern and Western Features two hills with cliffs to the seaward side and all round fields of fire landward On the landward side of the port approximately 500 yards from the harbour were the Weapon Pits defending the road leading from Escures to the port (It appeared that the Germans had considered the possibility of an attack from the landward side) In addition many of the buildings in the port especially round the inner harbour were defensively manned The Eastern and Western Features were formidable defensive positions consisting of trench systems concrete emplacements barbed wire mines and fixed flame throwers The business end of the latter consisted of a right angled nozzle projecting almost imperceptibly from the ground and anyone who saw the sudden appearance of a glow in front of him had been warned to move quickly to the side as the glow was caused by the electric igniter in the mouth of the flame thrower nozzle

The axis of the attack was along the Escures to Port en Bessin road X A and B troops which had lost least of their personnel and equipment on the landing were to lead the attack with forward HQ behind them X troop's task was to assault the Weapon Pits to the left of the Escures to Port-en Bessin road as it approached the town

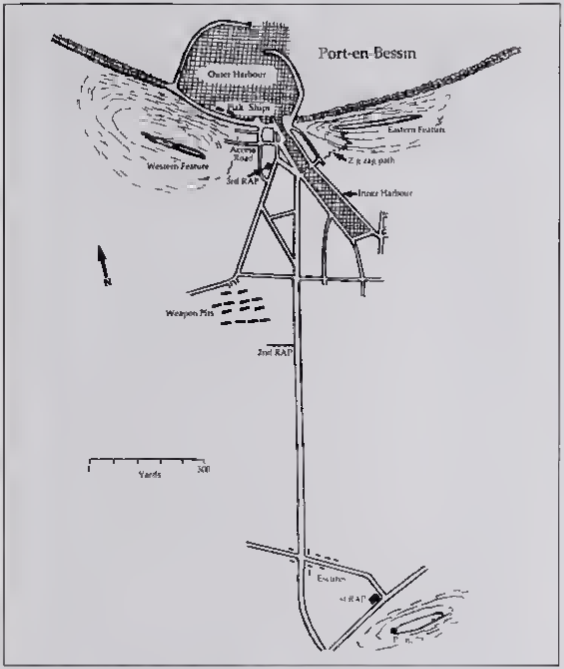

Figure 4 The approach to Port-en Bessin with its defences

A and B troops were to move through the town clearing any opposition there. A attacking the Western Feature and B the Eastern Feature. These attacks were timed for 1600 hours and with the establishment of communication with 231 Brigade and the Navy it was arranged that prior to that the port would be bombarded from the sea by HMS *Emerald* followed by a 10 minute attack by rocket firing Typhoon aircraft followed by smoke laid down on the Eastern and

Western Features by 231 Brigade artillery The artillery FOB (forward observation bombardier officer) attached to the commando for this operation had been missing since the landing bat 231 Brigade had immediately given as another Y troop one of those seriously depleted in the landing was to be left in the Escures area to defend against a likely counter attack from Fosse Soucy one mile to the south west where there was a known concentration on German troops Rear HQ was to remain sited near Point 72 with responsibility for its own defence Q Troop half of whom had been lost in the landing was to be held in reserve The RAP was to operate at the discretion of the medical officer

As A B and X troops moved off the Port 72 ridge they came under fire from the Fosse Soucy direction They returned this fire X troop then proceeded first along the Escures to Port en Bessin road halting after a short time in cover to the left of the road until the agreed start time for their attack They were followed by A and B troops led by a French gendarme (who was wounded later in the day) He led them along ditches at the side of the road bypassing the Weapon Pits unseen and entering Port-en Bessin

The bunker near Escures provided excellent accommodation for an RAP but was too far from the port Leaving the Q and Y troop medical orderlies (Lance Corporals Thornton and Hancock) to serve the Port 72 and Escures areas the RAP (medical officer RAMC sergeant RAMC one medical orderly/stretcher bearer and one MOA together with the padre and his MOA) moved off down the Escures to Port en Bessin road behind A B and X troops By about 1600 hours the RAP was established in a sunken lane on the left of and at right angles to the road near the Weapon Pits but shielded from them by a bank of earth and a line of trees

The main battle however was likely to be in the port itself so a little later leaving Sergeant Leaman RAMC in charge of the RAP I reconnoitred forward as the limited communication within the commando meant that direct contact was the only way that the nature of the battle and medical needs of the situation could be judged Unaware of the method by which A and B troops had bypassed the Weapon Pits along ditches I walked along the main road I had not gone very far when looking to the left I found to my surprise that I was looking straight into the Weapon Pits and that they were still manned by soldiers in field grey uniforms

Fortunately their attention was directed elsewhere as almost simultaneously there was concerted shouting and shooting from the left and behind Looking round I saw two sections of X troop led by the troop commander Captain Walton (killed a few weeks later) charging across the open ground in front of the Weapon Pits The attack which I had assumed would be over was just beginning There was very little response from the Weapon Pits The defenders seemed to be concentrated in a dug out and some trenches but despite the advantage of their defensive position the menace of the commandos bearing down on them proved too much for them One after another the defenders filed out arms aloft The first phase of the battle for Port-en-Bessin was over

Moving into the town I made for the Western Feature where the main action appeared to be taking place Reaching the access road which led between houses on to the Western Feature I met Captain Consins the A troop commander He had a very different tale to tell Led by the gendarme A troop had reached this access road after coming under mortar fire on the way This killed one marine and wounded an NCO Where the access road emerged between the last of the houses on to the open slope of the Feature it was blocked by coils of barbed wire which the marines had cut by blowing a gap using one of the few Bangalore torpedoes Advancing up the face of the hill A troop had been deployed in two halves, two sections going to the right and two to the left The marines were in view of the outer harbour but it was not thought that this exposure constituted any serious danger as the latest intelligence reports had indicated that there were no armed vessels in the port The two Frenchmen had agreed about this Unfortunately the reality was different Two armoured flak ships had moved into the harbour just before D Day and had been unaffected by the naval and aerial bombardment which had preceded our attack. Had the evidence now available from an aerial photograph taken by the US Air Force on D Day been available to the commando the plan of attack and its outcome would probably have been very different

Flak ships with their anti aircraft armamentarium are capable of intense fire. The right hand troops advancing up the hill were in full view of the flak ships in the harbour They had been fired on from both front and rear and had suffered heavy casualties

The left hand group less exposed to the fire from the flak ships advanced further but came

under heavy fire from the positions above They encountered another barbed wire obstruction and although they got through it and almost up to the defensive positions above they were pinned down by hand-grenades (the potato masher type used by the Germans with a foot long wooden handle which enabled these grenades to be thrown further than the British grenade) hurled down on them They also suffered heavy casualties In the face of these losses the strength of the defences above and the devastating fire from the flak ships below Captain Cousins was forced to withdraw his troop from the hill

At the foot of the hill was the wounded leader of the left hand party Lieutenant Goldstein a South African and three other wounded marines Goldstein having almost reached the concrete emplacement above him When he recovered and tried to lift his Tommy gun he found that his left arm was useless Machine gun bullets were cracking overhead He managed to crawl back through the wire and joined up with five marines three of whom had been wounded Descending further in response to the order to withdraw the group as they turned a corner met five Germans but despite their injuries managed to get their blow in first Goldstein had shrapnel wounds of the left arm After these had been dealt with he insisted in going off to rejoin his troop but later collapsed and was carried into a French house When the RAP was established in the port about midnight he was brought into it

The problem was then to ascertain if any wounded marines had been left lying on the hill Cousins did not think that any had From a vantage point at the end of the access road it was possible to see most of the approach route taken by the marines Some were lying dead but there was no sign of movement and shouting produced no response

As the others withdrew from the Western Feature Corporal Amos with the left hand party delayed to apply a field dressing to his troop sergeant Sergeant Fletcher who was lying mortally wounded As he finished doing so a further grenade was thrown at him and exploded beside him miraculously without seriously injuring him although it tore off part of his trouser leg and left him lying dazed As he lay he felt himself being pushed by a foot and turned to find a German standing over him The German had thought that he was dead Amos was taken prisoner and found himself being interrogated in front of a notice which said that all captured commandos were to be shot In October 1942 Hitler had issued an order that captured commandos were not to be treated according to the Geneva Convention but were to be interrogated and then shot

Out of A troop s strength of 69 41 had been killed and 17 wounded In withdrawing by various routes the troop had become very dispersed and most of the wounded had found their way into or had been carried into French houses often into cellars as a means of protection and concealment One or two were able to make their way to the RAP

Moving then to the harbour area to ascertain the situation of B troop I found that they had reached the west side of the inner harbour without encountering much resistance Espying 10 Germans at the side of the inner harbour Sergeant Fuller (an Austrian enlisted in the British Army who was a member of the 10th Inter Allied Commando and attached to 47 RMCdo — he was killed a few weeks later) had walked forward twenty yards and with a voice of great power shouted to them in German to surrender The 10 came forward with their hands up While they were being searched however machine guns opened up from a large building on the far side of the inner harbour killing one marine and wounding 14 others Further fire was also directed against the marines from the Eastern Feature The marines had to withdraw quickly into houses on the west of the inner harbour taking the wounded with them Some of the severely wounded were taken into French occupied houses and those capable of walking were bandaged up and directed back to the RAP

It was now clear that the RAP must move into the port itself While I had been able to attend to some of the wounded in the town many of the more serious casualties were still widely scattered and required to be concentrated into a central RAP

Return to the RAP in the lane about 1900 hours revealed that a crisis was developing there Earlier intermittent firing had been heard from the Point 72 area and seemed to indicate that a counter attack was developing Just after my arrival at the RAP quartermaster sergeant Fletcher and one of his staff came down the road from Escures passing by the RAP They had with them two prisoners whom they had captured and were followed by two marines The information they gave was that a serious counter attack was in progress that the road from Escures had been cut a short distance back that the enemy were following close behind and would be likely shortly to overrun and capture the RAP

The account of this counter attack unfolding later was that the firing on the Point 72 ridge encountered by A B and X troops as they left the Point 72 ridge had intensified later Rear HQ came under further small arms fire It was then subject to machine gun enfilade fire and was mortared Most of the members of rear HQ numbering less than 20 occupied two of the hastily dug trenches near the centre of the ridge Only eight of the party possessed arms and so to concentrate fire power all of the party joined in one trench Two attacks on the trench were repulsed at least two Germans being shot dead A corporal in the HQ trench was killed and an officer and a sergeant wounded Finally 30 40 of the enemy advanced to within 10 yards of the trench They were met by rifle fire a hand grenade and two smoke bombs In the confusion so created most of the HQ managed to escape from the trench A few including the RSM were captured The wounded were also captured but when the Germans withdrew next day the wounded were left behind The intelligence officer who had been observing from an observation post outside the trench was cut off without being noticed and escaped in the darkness later

By the time the counter attack on Point 72 was intensifying Q troop had already been called forward to Port-en Bessin Due to inadequate wireless communication Colonel Phillips was unaware of the serious situation developing around Point 72 and Escures and now ordered Y troop to make its way to Port en Bessin The troop however was tied down trying to repel the counter attack and was unable to make satisfactory contact with the CO or with the dispersed defensive covering parties it had sent out A section of the troop was finally mustered and disengaged to the south east In the dark it sought to reach Port en Bessin by a circular route but was too late to take any effective part in the battle Meanwhile an attack on one of the dispersed covering parties compelled it to withdraw leaving three wounded in a ditch where they lay all night and were rescued next day

Lieutenant Bennett with the reserves of ammunition in four Bren carriers next entered the scene He could not move across country in the same way as could the troops on foot Due to allied bombing attacks and the location of German troops he had had to make many diversions to get to Port en Bessin He arrived at the Escures bunker area with his much needed carriers about 1700 hours before the main counter attack had developed and off loaded the ammunition there as ordered. When the counter attack threatened the Escures area he was ordered to reload some of the ammunition and proceed to Port en Bessin He did so and as one of the carriers turned into the Escures to Port en Bessin road the corporal in charge of it was shot through the chest He later reached the RAP Having arrived at Port en Bessin Bennett was sent back for the remainder of the ammunition at Escures Returning he found that the enemy now commanded the Escures area and the road leading out of it to Port en Bessin Arriving back at the RAP he confirmed the proximity of the enemy We then from the RAP observed German soldiers moving a field s length away Movement in the part of the RAP lane adjoining the Escures to Port en Bessin road was apparently visible to the enemy and now attracted their attention as it came under small arms fire It was therefore necessary to crowd the casualties into a part of the RAP which was hidden from view and protected by the bank There was no prospect of evacuating the RAP To have done so would have meant exposing to enemy fire those who could be sent out as walking wounded and for those who could not walk there were not enough stretchers to carry them or fit personnel to undertake this task quite apart from the fact that they would be shot at We put up a small red cross flag at the entrance of the RAP facing the Escures to Port en Bessin road and waited for the field grey uniforms to appear Time passed there was a period of ominous silence but no grey uniforms did appear As darkness fell a cautious reconnaissance of the road showed no sign of activity

With darkness and still no sign of an advancing enemy I decided to go back into Port en Bessin to raise a carrying party with a view to establishing the RAP in the port Return to Port en Bessin in the dark was not without its anxieties as we knew that it would be assumed there that the RAP had been captured Expecting a counter attack down the Escures to Port en Bessin road the commando had put up a defensive screen across the road Any movement beyond the screen was likely to be considered to be enemy and in that trigger happy environment shooting first at anything that moved on the Escures road was likely to be the order of the day As always my MOA Marine Pymm came with me A steel worker in civilian life and at 37 years ten years my senior he was one of the oldest men in the commando He tended to look on young men in their twenties including medical officers as slightly irresponsible and requiring some

protection from youthful follies He ensured that vocal communication in a Yorkshire accent preceded any visible presence A barrier which appeared to be deserted but which we felt would be covered by guns in the hands of those for whose shooting abilities we had some respect was approached without any demonstration of hostility Identity confirmed shadowy figures emerged from the darkness Rightly or wrongly troops in action and in danger of being wounded look on their medical officer as someone of some importance Thinking that he had been captured the warmth of their reception was now considerable Returning to the lane with a carrying party the seriously wounded were then carried and the walking wounded assisted into the town about a dozen in all As so many of our airborne stretchers had been lost in the landing or were already in use elsewhere, carriage of the wounded who could not walk was mostly by pick a back At the port I established as the RAP a stable like building where some of the wounded were already positioned It was after 2300 hours

The history of events since I had left the port then began to unfold After capturing the Weapon Pits X troop had moved to assist in the attack on the Western Feature Working their way through the west of the town they learned of the repulse from the Western Feature and the continuing threat from the flak ships As the flak ships were armour plated small arms fire would be unlikely to be effective against them and they would probably have to be boarded Arranging covering fire from four Bren guns a captured German machine gun and a 2 inch mortar Captain Walton with two sections then engaged in a flanking movement through the harbour installations with a view to attacking the flak ships along the quay to which they were moored He then received a message later proved to be quite false that the flak ships were already in marine hands He therefore concentrated his troop and moved through the town to the inner harbour area About the same time elements of Q troop withdrawn from reserve and now sited near the inner harbour succeeded in making their way through houses fronting the western side of the inner harbour and reaching a point from which they could see the flak ships They then found that if they moved forward they would be in the line of fire of the weapons covering Walton s planned attack and had to abandon this route They then met Walton and on returning with him received orders to join the other elements of Q troop for the assault on the Eastern Feature False information had resulted in the wasteful abandonment of two essential attacks

Thus a few hours before the RAP was established in the port the commando was in a somewhat parlous position It was isolated and threatened by the counter attack from the south which had already overrun rear HQ sequestered Y troop and resulted in the loss of reserve equipment ammunition was running low and Lieutenant Bunell had not yet arrived with the extra ammunition and weapons only the Weapon Pits had been captured the Western Feature attack had been repulsed with heavy losses it had not yet been possible to attack the Eastern Feature as all the strong points and concealed snipers in the harbour area had not yet been overcome the two highly armed flak ships were still in a position to cover most of the moves which the commando might make and if the flak ships moved away from the quayside would be virtually unassailable as the commando had no boats or artillery the troops were scattered and inadequate communication made control very difficult the toll of killed and wounded was rising with a corresponding depletion of the commando s strength the remaining troops were tired having had no more than an hour or two of sleep since leaving England 48 hours earlier it was assumed that the RAP had been captured

Two further moves were now initiated Due to the difficulty of attacking the flak ships from land the Navy was asked if it could neutralise them The destroyer *Ursa* and another naval ship the *Krakowiak* were lying 700 yards from the harbour s eastern breakwater These ships then moved in towards the harbour From the destroyer s position only the bridges of the flak ships were visible over the high breakwater wall The flak ships fired at the destroyer and the destroyer fired back In the gathering darkness the *Ursa* then sent two armed motor boats into the harbour They came under fire from the shore but not from the flak ships and when they approached the latter they found that they had been knocked out by the naval fire All the occupants of the flak ships were dead although a dog had survived

The second move was to try and maintain the momentum of attack by sending a small party from B troop to make an armed reconnaissance of the Eastern Feature and to attack it if possible This party immediately ran into heavy mortar fire as they moved through the buildings at the base of the Feature and nine marines were wounded By the time they had cleared the buildings only

three members of the party remained They then met Captain Cousins who following the repulse of A troop from the Western Feature had brought the remnants of his troop down to the inner harbour area and was reconnoitring the Eastern Feature The two parties three officers and 10 other ranks in all combined under his command From a house at the foot of the Feature they found a zigzag path leading up the Feature The path was not apparently mined and except at the bends and near the top was not visible from the defensive position at the top of the Feature The party moved up this path but 20 yards from the summit plateau came under heavy machine gun fire Grenades were thrown down on them fortunately falling short Further progress was not possible and Cousins and his party withdrew under smoke cover

Returning from this first attempt on the Eastern Feature Cousins informed Colonel Phillips that he felt that with a larger force of 25 men he could reach the top via the zigzag path As the Bren carriers under Lieutenant Bennett had now arrived it was possible to give covering fire from the carriers and for the Heavy Weapons troop to lay a smoke screen across the zigzag path using mortars Towards 2200 hours in semi darkness Cousins led his men up the zigzag path To begin with the marines were not visible to the enemy above but the latter were certainly aware of their presence Nearing the exposed upper reaches Cousins had arranged that when he fired a red Very light half the attackers would assault to the left (west) and half to the right (east) At 2220 the light was fired the troops moving left and right The left hand group which Cousins was leading moved along the top of the hill through several wire fences breaking up into small parties to deal with pill boxes by firing through the slits and lobbing grenades Nearing the west end of the hill they came under very heavy fire at close range Cousins halted his marines in some anoccupied trenches and taking four with him ran on through a gap in a wire fence ahead The waiting group heard bursts of fire exploding grenades and a lot of shouting They then ran forward as planned Forty yards ahead they found Cousins lying dead killed by a grenade with a marine Marine Madden lying beside him suffering from a serious head wound Cousins had been killed as he played with the enemy but his sacrifice was not in vain as his action had weakened the enemy morale

The Eastern Feature is a ridge 600 yards long Captain Vincent leading the right hand group reached the summit and traversed a further 100 yards to the right (eastward) the group firing from the hip as they went Determined attackers scarcely visible in the dark unidentified explosions gunfire and the shouts of excited men engaged in battle had further weakened the will of the defenders As Vincent s men turned to close with them an officer and seven Germans surrendered Sending two prisoners ahead of him so that he would avoid mines Vincent then moved 100 yards westwards along the ridge An Ober Leutnant now surrendered As Vincent continued to move along the ridge more shadowy figures emerged from the darkness in surrender Having traversed the ridge to its west end Lieutenant Stickings (killed later) of Vincent s party met the restdrun of the left hand party They were in a position in which the enemy could see them on the skyline but they could not see the enemy There was a further exchange of fire but soon this last resistance ceased and another four officers and 34 other ranks surrended The assault party of four officers and 24 other ranks outnumbered 4 to 1 without artillery or air support and anacking up a steep slope against an enemy familiar with the terrain and enjoying much greater fire power and with the benefit of an entrenched barbed wire protected position above their assailants had succeeded against all these odds The critical point in the battle for Port en Bessin had been reached and the determined courageous action of a few men had turned the tide in the commando s favour On such so often does the outcome of battle depend

The RAP had now completed its move into the port It was nearly midnight In the RAP lay 30 British and two German soldiers now enemies in name only and united in their common battle for survival There were also two injured French civilians As the night wore on 10 more commandos were brought in mostly from houses whose French occupants had taken them in despite the risk of reprisals should the Germans retake the port There were gaping abdominal wounds with ruptured intestines chest wounds exuding bloody froth with each breath genit tha lacerated by shrapnel bullet and shrapnel wounds of the head and face and all manner of limb wounds There was no hope of evacuating these casualties as Port en Bessin was effectively cut off Clearing wounds of debris control of bleeding field dressings and bandaging morphin splinting and oral fluid where indicated and such sustenance as was possible were as much as could be provided in a physical sense encouragement and optimistically

orientated explanation in a psychological sense Despite so much pain and suffering there was little noise but rather an absence of talk a stillness as men previously so active and committed lay prostrate uncomplaining without self pity or recrimination turned in on themselves and fearful not of the enemy but of the fallibility of their own bodies Most were now relieved of the anxiety of the conscientious soldier that in the face of danger and hardship he should maintain his self respect and the respect of his mates Some of the casualties including Corporal Robertson a distinguished Scottish athlete were mortally wounded

With the Western Feature still unconquered morning broke with the prospect of yet another bloody battle In the RAP supplies were running low but a call relayed to the Americans who had suffered so severely at the nearby Omaha beach resulted in a drop of field dressings and sulphonamides Near to the RAP guarded by only a few marines a mass of prisoners were herded together in a courtyard diverting themselves from any self analysis of the part they had played or failed to play in the recent battles by busying themselves with personal effects comfortable sitting positions cigarettes appropriate toilet opportunities and contemplation of their uncertain future For some concern regarding the latter appeared to be ameliorated by the knowledge that at least for them the war was probably over and that they had survived intact

During the night news of the capture of the Weapon Pits the Eastern Feature and the defences in the harbour area as well as the destruction of the flak ships doubtless reached those defending the Western Feature The collapse of morale to which General Horrocks referred now took place Corporal Amos in one of the dugouts at the top of the Western Feature saw this He had been aggressively interrogated shortly after capture by an officer in the presence of a corporal who seemed to have some political function and was urging that he should be shot He was then treated more leniently when it was recognised that although covered in blood — the blood of his troop commander Sergeant Fletcher whom he had tried to help — he was unwounded The Germans thought he must be a medical corporal He was therefore told to treat a number of German wounded including one with a serious chest wound and another with a compound fracture of the forearm He did not disabuse them regarding any medical credentials and resourcefully played the part

Amos in time fell asleep and when he wakened at 4 o clock in the morning it was clear that he was to take part in some German plan The German corporal who had sought his demise appeared to be given some message and quoting Amos equipped with a Schmeisser and haversack disappeared into the dawn A German officer gave Amos a cigar and said "Kumerad prisoner A number of Germans collected and showed him a flag with a red cross on one side and white on the other The Germans indicated their intention to leave the strong point Amos motioned to the front door leading to the direct route to the harbour below but the Germans directed him to the back door indicating that the direct route (up which the marines had attacked) was mined Leaving the dug out each of the hand Germans surrounding him shook Amos by the hand and saluted Descending by the circuitous route indicated to him Amos finally ran into a defensive outpost of the commandos and handed over his prisoners

The arrival of Amos and the 23 Germans who accompanied him was greeted with some astonishment relief and a sense of anti-climax by those who were preparing for a further assault on the Western Feature Captain Spencer the new adjutant, and a fluent German speaker led a party up the Feature to take the surrender of the other occupants but found all the positions unoccupied The remaining Germans had gone

The last task an armed break out to retake the Point 72/Evantes ridge and make contact with the British Army on one side and the American on the other was carried out that day (8th June) against only desultory resistance 47 RMCdo now linked the British and American armies The three marines from Y troop who had been wounded on the previous day were found lying in a field by the roadside

The battle for Port en Bessin was effectively over The wounded could now be evacuated Some were moved to the American sector by road and some evacuated by sea by an Army port company which had now entered to take over the operation of the port Already the arrangements for bringing in the petrol for the 21st Army Group were beginning to operate There was some wry amusement among the marines when seven members of the newly arrived port company brought in a solitary miserable looking German soldier whom they had found hiding in a building All seven were menacingly pointing their loaded rifles at their understandingly apprehensive captive One marine relieved them of their prisoner

Two days later as the commando prepared to move off to a new location the medical orderlies at Point 72 who had gone missing presumed captured reappeared Before the counter attack on the Point 72 area had developed the Mayor of a nearby village (Commes) arrived to say that a wounded British airman was being cared for in the village He had been there for a few days and needed medical help The medical orderly of one of the troops defending the area Lance Corporal Thornton was despatched to attend to him Thornton was a man of great determination and initiative Young in years he was already a veteran of many battles including Dunkirk and then as a commando the Lofoten Islands raid the Dieppe raid the North African campaign and the invasion of Sicily He was accompanied by Corporal Terry They reached and treated the wounded airman but Terry received a bullet wound of the thigh with which Toraten dealt Returning to find the counter-attack on Point 72 in progress Thornton was told to man the Escures RAP with Lance Corporal Hancock who had remained there In the late evening the RAP came under mortar fire When the mortaring stopped and darkness fell the exhausted occupants fell asleep in the rear section of the RAP bunker They awoke a few hours later to find that the RAP area had been overrun during the night and ransacked with the exception of the rear section of the bunker which had not apparently been entered The whole area was deserted Thornton and Hancock with another marine then set out for Port-en Bessin on bicycles but ran into a German cyclist patrol and were made prisoners Their captors took them to a nearby chateau passing on the way 250 300 Germans all with bicycles plus a self propelled gun and several staff cars At the chateau the medical orderlies were set to attend to German wounded of which there were many Next day the wounded were evacuated and the marines were marched six miles halting in the evening at a farm where they were imprisoned in a barn While there sounds of battle were heard and a report of tanks in the vicinity appeared to create some panic among the Germans Recognising that their guard did not seem very anxious to maintain his enemy status Thornton and Hancock and another marine made their escape into the farmyard to be joined in hiding a little later by their erstwhile guard In due course American troops appeared in the farmyard and Thornton and Hancock found their way back to the commando Rejoining his troop, Thornton was met by the troop commander's comment 'You haven't shaved, Thornton

CASUALTIES NATURE AND NUMBER

Of the 420 commandos who had left the *Princess Josephine Charlotte* and SS *Victoria* 276 could be mustered on 9th June Thirty two had been killed 59 had been wounded and 53 were missing (By the end of June two officers and 18 other ranks most of whom had been in sunken landing craft and had been picked up at sea by craft or ships returning to England had rejoined the unit but 33 including some who had been killed drowned or wounded on the landing and some taken prisoner were still unaccounted for) The depleted medical orderly/stretcher bearers whose task could mean exposure in the open when others were taking cover had carried out their duties in a most exemplary fashion (two Lance Corporals Jesney and Kendrick were later awarded the Military Medal as was Corporal Fymm)

During the two day battle for the port 48 commando officers and other ranks had been dealt with at the RAP as well as seven Germans and two Frenchmen In a battle of this nature fought at such close quarters bullet wounds and shrapnel injuries from hand grenades and mortar bombs predominate Among the 48 wounded commandos 30 suffered shrapnel wounds 16 had bullet wounds — one with an associated blast injury to the lungs one suffered a blast injury to the face and one was in such a mental state that he could no longer continue

AFTERMATH

On 10th June General Montgomery visited the unit to congratulate it on its achievement Already the commando was preparing for its next assignment a move from the extreme right to the extreme left of the British beachhead to support that other formation picked out by General Dempsey for special mention the 6th Airborne Division

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Letters to the Editor

Sir

The Naval Medical Senior Officers Course (NMSOC) has been discontinued. Although much of the teaching and experience provided by the course can be obtained in other ways and on other courses, the NMSOC is unique in providing an opportunity for medical officers from all areas and disciplines to meet, exchange ideas, and gain some insight into the problems experienced by their colleagues as well as the opportunities provided by areas of Royal Naval Medicine other than their own. In the case of many medical officers working in hospitals, it is a long time, in some cases years, since they have visited a shore base Medical Centre or boarded one of Her Majesty's Ships. Conversely, unless they have worked in a hospital recently, medical officers working in primary care have a limited knowledge of the problems faced by their hospital colleagues. During the NMSOC in November/December 1994 it was generally agreed that the opportunity for liaison between medical disciplines was one of the most important aspects of the course.

The only remaining formally organised opportunity for large scale liaison between medical officers is the annual General Practice Meeting, and this naturally has a bias towards primary care. Considerable benefit could be gained from a weekend meeting for Royal Naval medical officers at the Royal Naval Hospital Haslar, and in the future an annual meeting for all Forces medical officers at the Royal Hospital Haslar. The emphasis for any meeting should be on exchange of views, ideas and news between officers of different disciplines, rather than a formal meeting, although update lectures from the various clinical specialities would be both interesting and useful. The annual meeting of Royal Naval General Practitioners would not suffer by encouraging hospital specialists to attend, not purely as speakers but as delegates.

The decrease in size of the Royal Naval Medical Service has the potential for producing a closer knit Service. Any move towards this by increasing communication between its members can only be beneficial.

I have the honour to be Sir,

Your obedient Servant

R W J HADDON

Surgeon Lieutenant Commander

DPMO

RMS *Seahawk*

THE WILHELMSHAVEN ASSOCIATION
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Dear Editor

I am one among many who have lost their school friends — children of servicemen stationed in Germany after World War 2 who attended Prince Rupert School, Wilhelmshaven between 1947 and 1972. It was a marvellous school and the majority of us loved being there but the service life ensured that we were plucked away from our friends at short notice when our fathers were posted elsewhere and are now spread far and wide across the world. There is now an organisation which can put ex inmates (') in touch with each other.

It's called The Wilhelmshaven Association - is run on a voluntary basis and strives to find as many ex pupils and staff (both teaching and non teaching) as possible to enable them to become members of the association and receive newsletters, details of reunions, trips to Wilhelmshaven, etc.

Some of the people we are trying to trace may well be subscribers to your publication and we write to enquire whether you would be kind enough to print a small article or this letter about the association asking anyone with knowledge of the whereabouts of anybody who had any connection with this school to contact us at the ABOVE address/phone number.

Thanking you in anticipation

Yours sincerely

HILARY N SEABORN (Mrs)

Book Reviews

ABC of Asthma Third Edition John Rees and John Price BMJ Publishing Group April 1995 UK £8 95 Overseas £10 00

Despite the very many advances in diagnosis and management since the first edition of this book was published in 1984 asthma remains a challenging diseasn whose prevalence and severity continues to rise Recent acknowledgement that asthma is an inflammatory disease has led to earlier and more widespread use of inhaled nortcosteroid treatment but asthma remains under-diagnosed and under treated There are still many nontroversial areas including the role of pollution in causing asthma occupational asthma the value of exercises to reduce alterea levels the role of theophyllines and the place of regular bronchodilators in treatment For the non specialist there is a need for a concise readable and which offers clear and unambiguous advice The ABC of Asthma fulfils this need admirably It is an excellent little book which provides a comprehensive yet concise update The text is well laid out and illustrated there are clear headings and boxes containing key information

Three chapters are devoted to the management of asthma in children The others cover deficientin and diagnosis diagnostin testing clinical course and precipitating factors and three are fom chapters on the management of acute and chronic asthma Finally there is a brief overview of available delivery systems for asthma treatment This is a confusing area for many physicians and a more detailed appraisal of the benefits and disadvantages of each device would have been useful The sections on treatment inevitably reproduce and amplify the British Thoracic Society guidelines Perhaps more emphasis could have been placed on stepping down treatment and advice how this can be done

The ABC of Asthma is didactic and there are no references Yet if it were read by all who look after patients with asthma there is no doubt that the standard of care in this country would improve enormously

W M Edmondstone
Head of Medicine
RNH Haslar

Gastroenterological Problems in the Tropics Ed G C Cook BMJ Publishing Group May 1995 Pp 152 UK £14 95 Overseas £17 00

Many of the three million travellers from industrialised countries who visit the tropics each year will return home with potentially serious gastroenterological problems The BMJ Publishing Group have produced an excellent compilation of review articles previously published as leading articles in *Gut* 1994-1995 which discuss various aspects of gastroenterological conditions imported from the tropics This slim paperback is edited by the President of the Royal Society of Tropical Medicine and Hygiene who has assembled an international team of experts to describe the aetiology diagnosis and management of important gastrointestinal infections including travellers diarrhoea cholera and other toxigenic diarrhoeas small intestinal parasites salmonelloses and shigelloses amoebiasis and hydatid disease Paediatric problems and surgical emergencies in the tropics often under-emphasised in smaller texts, are also reviewed Each chapter is authoritative concise and achieves a refreshing balance of science and practical management advice There is something for everyone for the general practitioner faced with a child with threadworms to the physician treating malabsorption syndrome

All military physicians should have access to a copy of this book which will also prove popular with candidates for the MRCP and DTM&H examinations Every warship should have a copy in the sickbay

C D Gillan
Head of Gastroenterology
RNH Haslar

Surgical Case-Histories from the Past Harold Ellis Royal Society of Medicine Press 1994 Pp 244 £20 00

Professor Ellis has given us a cracking good read in a book which cannot be left to the surgeon alone to enjoy It should not be missed by anyone with an interest in the history of medicine or the perspicacity selfless application and often sheer courage of surgical pioneers — some in the not do distant past His has presented this feast in four courses Major Advances The Surgeon at War Surgical Emergencies and Disasters and The Surgeon at Work each a collection of tightly written gripping accounts guaranteed to delight regardless of whether you read the book from cover to cover or choose to dip into one section after another Treat yourself!

G H G McMillan
Dean of Naval Medicine

Multiple Sclerosis — Current status of research and treatment Eds Robert M Herndon and Frederick J Seil Demos Publications New York 1994 Distributed by Gazelle Book Services Lancaster Pp 241 £56 99

It is difficult to be upbeat about a hardback text devoted entirely to multiple sclerosis Despite decades of research no cure or truly effective treatment has been found and MS remains the major cause of chronic neurological disability in young adults However significant advances have been made in the understanding of the immunopathology and pathophysiology of demyelination and this role in the symptomatology of MS and its complications

The American and Canadian co-authors (and one contributor from Queen Square) attempt to provide an overview of the state of play in basic neuroscientific research in MS and its application to the understanding of pathogenic mechanisms symptomatology and the immunological basis for new therapies

The first eight chapters of the text assume that the reader has a reasonable grounding in basic neurosciences and immunology and review many aspects of the pathophysiology and immunopathology of demyelination. The remaining six chapters are more clinically orientated and include a review of the impact of magnetic resonance imaging in diagnosis, reasons for misdiagnosis in MS and the status of immunomodulatory therapy. The final two chapters provide excellent coverage of cognitive and emotional disorder, bladder, bowel and sexual dysfunction.

This volume will appeal primarily to neuroscientists researchers and neurologists with a dedicated interest in MS and should find a niche in medical libraries rather than on individual bookshelves.

C D Gillen
Head of Gastroenterology
RNH Haslar

Fitness for Work: The Medical Aspects. Second Edition. Eds. R A F Cox, F C Edwards, R I McCallum. Oxford University Press. 1995. Pp 540. £27.50.

This amply excellent book should be readily available to all RN Medical Officers any of whom may be required to advise on an individual's employability. This improved and updated edition is in the same format as before, with each chapter addressing a different system and co-written by a clinical specialist and an occupational physician. The reader is provided with detailed information and discussion about the possible effects on employability associated with all of the major medical problems. Considerable guidance is given to facilitate with the assessment of the individual. I particularly appreciated the immensely practical approach taken in the various appendices which address such topics as fitness for driving, working overseas and medical retirement considerations. Strongly recommended.

P I Raffaelli
SFMO, Northwood

Outcomes into Clinical Practice. Ed. Tony Delamothe. BMJ Publishing Group. November 1994. Pp 169. UK £17.95, Overseas £19.00.

Health Outcome is currently defined by the DoH as an attributable effect of intervention or its lack on a previous health state. The Chief Medical Officer in his chapter makes a valid point about the use of the word 'into' in the title stating that outcome assessment has been part of good clinical practice for centuries and that therefore no re-insertion is necessary. However he and other chapter authors also point out that perhaps this re-emphasis has become necessary in the light of the increasing emphasis on business practices, the funding of and channelling of resources within the new NHS all of which are a constant feature of press reports. This sets the tone of the book — concern with publications, politics and the use of outcomes to ensure that the 'best treatment is prescribed'.

Concerning the latter, there is an alarming chapter on cost-effectiveness. This appears to state that from some viewpoints treating more people less effectively is better than treating less people more effectively. To be fair the author is well aware of the dilemma and hesitates to indicate how the medical profession may react to this. There are chapters on most aspects of health care including a very sensitive one on 'whose outcome is it anyway?', a realistic one on General Practice and in the context of this book an inconclusive one by a psychiatrist.

It is not an easy book to read containing many new or unfamiliar terms and the use of such words as 'nonmedical' 'iso-outcomes' and the (to me) non-word 'informatics'. The cover states that this book will provide an ideal starting point for all members of 'clinical teams'. I disagree.

O M Howard
Clinical Services 3

Cancer Prevention in Primary Care. Joan Anstoker. BMJ Publishing Group. February 1995. Pp 181. UK £12.95.

Cancer is currently responsible for a quarter of all deaths in the United Kingdom. Evidence increasingly shows that lifestyle and environmental factors play a large part in the development of many cancers. That most cancers are probably avoidable and moreover could be prevented or diagnosed earlier.

This book, written by Joan Anstoker, Director of the Cancer Research Campaign Primary Care Education Research Group, summarises the evidence and sets out to explain the effectiveness of intervention and the advice that should be given to patients. This it does well. On a chapter basis it deals both with specific cancer sites and more generally the effects of diet, smoking and alcohol on malignant disease.

Concise and well researched, it makes free use of tables and boxed lists to summarise relevant points and is strong on practical aspects as well as theoretical considerations. Where doubt exists it is highlighted. The book is useful as a lucid introduction to the topic for those new to Primary Care and equally relevant to established members of the Primary Care Team providing a tool to help evaluate current practices and initiate new preventative programmes. It would be a valuable addition to the Practice Library.

However BMJ readers considering private purchase may recall that the contents were originally published in the form of eleven articles between May and July 1994. This book does not appear to acknowledge this.

P F R Tolley
Principal Medical Officer
HMS Warrior

The First Steps in General Practice Derek Gallen Warwick Coulson and Glynis Rankin Blankwell Scientific Publications 1994 Pp 150 £9 95

This is a highly information packed soft back publication which is ideal for anyone contemplating entry into general practice As a former general practice trainee in the Royal Navy I would have found this book of great help and assistance in my training year

As indicated in the book s preface the authors have sought to give a balanced approach looking from both an applicant s and a practice s point-of view The book is written to give the applicant information such that he can assess both his and the practice s interests General practice can be a very long term commitment without the luxury of the regular breaks that one sees in the Armed Forces

I thoroughly enjoyed the chapter on The Interview Experience The type of popular questions that are thrown at applicants are very well outlined together with the provision of amusing insight into the often hidden agendas Trial by Sherry is also discussed There s an amusing anecdote of a practice throwing a dinner party for short listed applicants A alumnal psychologist was on the guest list Apparently each candidate was taken away to be questioned by the psychologist during the evening! You are warned

In summary this is a very good read I recommend it as a very useful book for those intending to pursue a career in general practice

Dr David Morgan
Medico legal Adviser
Medical Defence Union

The Pre Hospital Emergency Management Master Tim Hodgetts Iain McNeil Matthew Cooke BMJ Publishing Group May 1995 Pp 72 UK £29 95 Overseas £32 00

This publication aims to provide a durable quick reference guide for providers of emergency out of hospital medical care The authors also hope that it will be of interest to junior doctors employed in Accident and Emergency Departments It is unusual in that it is printed on waterproof paper and presented in a loose leaf folder format the intention being to provide a practical text which can be used at the scene of an emergency and that can be customised by the owner

The authors are actively involved in the provision of pre hospital emergency care and in instructing those involved in pre hospital care schemes The content consists of a practically arranged compilation of established treatment protocols and algorithms (for basic life support cardiac emergencies respiratory emergencies trauma and burns) concise guides to practical procedures useful formulae and drug data and a guide to the medical officer s role at the accident scene or the scene of a major disaster The text contains many useful tips and proformas for record keeping which are obviously the product of first hand experience

This volume provides essential information and sound practical guidance for pre hospital medical personnel and will no doubt prove popular with the emergency services and those involved in pre-hospital care schemes Although interesting for the hospital practitioner in that it provides insight into the problems and challenges associated with the provision of pre hospital care the content relevant to hospital practice is already available from many other sources This guide would however prove to be a godsend to hospital personnel thrown unprepared into a major incident and perhaps should be included in every A&E department grab bag suitably customised for local use

C J Cahill
Head of Accident and Emergency Department RNH Haslar

And finally a review of a video

Jo s Story An Induction Programme for Pre-Registration House Officers Gareth Williams Audio Visual Centre University of Newcastle upon Tyne 1993

This video programme provides guidance for new house officers and would ideally be sent with other joining instructions to be viewed in advance of the induction day

The video has many strong points providing sensible advice and reassurance Although filmed in a specific hospital setting it tries hard to avoid being parochial It lasts 35 minutes and with rather a slow pace it is perhaps a little long However the quality of production is high

The tone of some of the advice is questionable The video tends to reinforce the regrettable impression that consultants should be held in awe Seeking advice from middle grade staff is encouraged but too much emphasis has been placed on the importance of obtaining all results from investigations prior to seeking help with inadequate stress on recognising the need for urgent senior intervention

The criticisms of this training programme should not detract from its many strengths It provides a good model on which to build future refinements and matches closely its aims which are laudable

R J Clark
Department of Medicine
RNH Haslar

Obituaries

Surgeon Captain (D) Rupert William Stevens LDSRCS(Eng) Royal Navy died 3 May 1995 shortly before his 89th birthday. Born in London on 21 May 1906 his parents came to live in Alverstoke and he attended Portsmouth Grammar School before studying dentistry at Guy's Hospital qualifying in 1929. He joined the Royal Navy in January 1930 and had a varied career including some years with Royal Marines training establishments and in postings to the Mediterranean. His first seagoing appointment was to HMS *Resource* in the Mediterranean and he served in the Naval Hospital at Bighi Malta from 1938 to 1942 much of this time in the acting rank of Surgeon Commander (D). He served as Fleet Dental Surgeon to Commander in Chief Home Fleet in HMS *Vanguard* before she paid off and then HMS *Tyne*. His quiet and efficient manner marked him out for higher rank and he was promoted Surgeon Captain (D) in June 1957 serving for three years as Command Dental Surgeon in HMS *Drake*. He returned to Malta in 1961 for his last appointment as Fleet Dental Surgeon to Commander in Chief Mediterranean at the HQ in Lascaris. He retired from the Service after 33 years in May 1963. He is remembered by those who were his juniors as a very correct officer, quiet and calm — nothing ever seemed to ruffle him — and in spite of a formidable appearance complete with monocle he was approachable and kind always the source of sensible advice.

On retirement he worked in the School Dental Service in Gosport for several years and after this became an active member of the steering committee of the Abbeyfield Society in Gosport. As a keen do it yourselfer he also undertook general handyman jobs in the homes and was a frequent visitor to the homes and local hospitals.

He was married in 1934 to Evelyn Blake in St Mary's Church Alverstoke where in later years he became a sidesman. His wife was also a local from Alverstoke they owned the same house in Alverstoke to the present day and had two children. Ann and Peter. A man of strong Christian principles he was a well known figure around Alverstoke always ready to chat to people and known for his kindness and readiness to help others. Those who knew him described him as a gentleman and officer of the old school.

JVH

Surgeon Lieutenant Commander Richard Huw Patrick Williams RNR a consultant general surgeon at Neath General Hospital West Glamorgan died on 15 January 1985 at the age of 48.

He qualified MB BCh from the Welsh National School of Medicine in July 1969 and entered the Permanent List of the Royal Naval Reserve as a Probationary Surgeon Lieutenant Commander in February 1977 being granted seniority to date 24 August 1975. He was confirmed in rank in February 1978. He retired from the RNR at his own request on 1 April 1985.

We have also learnt of the death of **Miss Helen Moore CBE RRC, ex-Matron in Chief QARNNS**. An obituary will be published in the next issue.

Any personal reminiscences of the above officers would be welcomed by the Editor.

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Service News

United Services Section of the Royal Society of Medicine — Bayer Prize

Pictured here with the President of the United Services Section of the Royal Society of Medicine are the finalists of the 1994 Bayer Diagnostics Prize Competition on 1 December 1994. All received £50, with the winner, Surgeon Lieutenant Commander N P J Cripps, netting £100 for his paper on 'The Mechanism of Intestinal Injury in Non-penetrating Impact'.

All those in professional training are eligible to enter, submitting original papers on subjects of professional or Service interest. A Committee of the Service Deans chooses the six best entries, two from each Service, who then have 15 minutes to present them.

Medical Officers are encouraged to apply for Fellowship of the Royal Society of Medicine, which has Sections representing all specialties, excellent dining, overnight accommodation and library facilities. Annual subscriptions, with special concessions for those within 10 years of Registering, entitle a Fellow to membership of three Sections. Further information is available from the Dean of Naval Medicine.

One for the scrapbook HMS *Broadsword* WIGS 1994/95 Remembrance Sunday 1994 Grand Turk West Indies Medical Officer Surgeon Lieutenant Peter Billingsley (with colour) and POMA Andy Heap (Petty Officer of the Guard)

Academic awards for QARNNS Personnel

A week of celebrations took place in the Guildhall Portsmouth in July when the University of Portsmouth congregated for the conferment of academic awards Senior Nursing Officer C Doughty QARNNS was awarded a BA(Hons) Nursing with Education and CPONN J Logan QARNNS received a BA(Hons) in Education

The School of Health Studies presented their awards on 18 July and diplomates included 30 QARNNS nurses who received the Diploma of Higher Education in Nursing Studies The awards were presented by the Chancellor of Portsmouth University Lord Palumbo of Walbrok

The MOIC RNH Haslar and Matron in Chief were among representatives of the Royal Naval Medical Service to witness the ceremony which radicated the culmination of much hard work and study

Inter-Nursing Services Tennis Championship

The Championship was inaugurated in 1937 and apart from a break during the war has been played annually

The 1995 Championship was played off at RNH Haslar with QARNNS retaining the cup for the fourth year running QARNNS representatives were Senior Nursing Officer C Doughty Senior Nursing Officer N Broom Leading Naval Nurses D Joseph and H Caldwell and Senior Naval Nurse C Underwood

On completion the silver cup which is engraved with the badges of the three Nursing Services and winning players was presented to the winning team by the Matron-in-Chief Principal Nursing Officer C Taylor RRC QHNS QARNNS

Student Nurses of QARNNS and QARANC at Westminster Abbey on 9 May 1995 where they provided the escort for the Lamp during the Florence Nightingale Commemoration Service

QUEEN'S BIRTHDAY HONOURS 1995

Commander of the Most Excellent Order of the British Empire
Commandant Nursing Officer J Titley RRC

Member of the Most Excellent Order of the British Empire
Lieutenant Commander (MS) M A White BEM
Chief Petty Officer Medical Assistant D Darbyshire

Royal Red Cross
Principal Nursing Officer J Massey ARRC

Associate of the Royal Red Cross
Superintending Nursing Officer L J Butcher

ROYAL NAVAL MEDICAL AND DENTAL OFFICERS

APPOINTMENTS AND PROMOTIONS

To Surgeon Commander (D)
M R C Gall

To Surgeon Lieutenant Commander
A T Dewhurst M C Evershed M W Farrar D H Jarvis S J Loxdale S R C Smith S A Stapley P J Wolstencroft

To Surgeon Lieutenant Commander (D)
C R D Fox

Provisional Selections for Promotion to date 31 December 1995

To Surgeon Captain
P F R Tolley

To Surgeon Captain (D)
S Lambert Humble

To Surgeon Commander
S Hague A S Hughes P J Buxton

To Surgeon Commander (D)
G E Sidoli

Provisional Selections for Promotion to date 30 June 1996

To Surgeon Captain
W M Edmondstone

To Surgeon Commander
A J Burgess A J D Neal R M C McNeill Lloyd

To Surgeon Commander (D)
R E Norris

HIGHER QUALIFICATIONS

Surgeon Commander R J Clark — FRCP
Surgeon Commander S S Ridout — MFOM
Surgeon Lieutenant Commander A K Dashfield — FRCA
Surgeon Lieutenant Commander D C Mackay — FRCS(Ed) and FRCS(Glas)
Surgeon Lieutenant Commander C J A Edwards — FRCA
Surgeon Lieutenant (D) N Turnbull — FDS RCS(Ed)
Surgeon Lieutenant P D Edwards — FRCS(Ed)

TRANSFERS TO FULL CAREER COMMISSION

Surgeon Lieutenant Commanders
M J Midwinter S J Murray

NEW ENTRIES

Surgeon Lieutenant J E McLachlan
Surgeon Lieutenant (D) E J Winch

PLACED ON EMERGENCY LIST

Surgeon Lieutenant Commanders J Bedford R M Hayes D A Jones J M Clarke J G Pollard A Hudson
Surgeon Lieutenant Commander (D) M F Thomas

COMMISSION TERMINATED

Surgeon Lieutenant Commander A L M Jenkins

RETIREMENTS

Surgeon Captain M A Macleod
Surgeon Commanders W R Esson D K Price
Surgeon Lieutenant Commander (D) R J Colbeck

MEDICAL SERVICES

APPOINTMENTS AND PROMOTIONS

As Officer in Charge, Royal Naval Hospital, Gibraltar 30 June 1995
Commander D E Shone

To Lieutenant
R A Stead N Wagstaff

RETIREMENT

Lieutenant P R Wellings ARRC

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

APPOINTMENTS AND PROMOTIONS

To Senior Nursing Officer
L E Mortlock S L Griffiths, R E Haywood

NEW ENTRIES
Nursing Officers S J Fletcher S A Ziegler

RETIREMENTS
Superintending Nursing Officer A L Robertson

ROYAL NAVAL RESERVE

Provisional Selections for Promotion to date 30 September 1995

To Surgeon Captain
J Maitland — *President*

To Surgeon Commander
P J Hughes — *King Alfred*
R K Strachan — *President*

NEW ENTRY
Acting Surgeon Lieutenant R W Harrison — *Sherwood*

RESIGNATIONS
Surgeon Commander C A Devall — *Eaglet*
Surgeon Lieutenant Commander R P Bryce — *Northwood*

RETIREMENTS
Surgeon Lieutenant Commander G M Murray — *Eaglet*

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Contents

Cover illustration: Surgeon Lieutenant Mark Turner prepares for escape through 300 feet of Submarine. Full story on page 210

Councillor Mrs Margaret Bailey, Mayoress of Gosport and Surgeon Rear Admiral Sandy Craig, MDG(N), with the Freedom Casket at the reception given by Gosport Town Council after the Freedom Parade on 18 September 1995 (see report on Page 240)

Editorial

The flurry of debate prompted by the death last autumn of yet another professional boxer illustrated how advocates both for and against the sport can draw upon the conflicting results of medical research to support their arguments. Regrettably this evidence and the reasons for divergent results were neither examined comprehensively nor explained objectively in the media coverage. Moreover perhaps because it arose from the traditionally Silent Service only fleeting reference was made to the newly published important paper by Surgeon Lieutenant Commander Paul Kemp detailing the adverse neurophysiological effects he found in studies of amateur boxers in the three Services' work which has been recognised by the University of Southampton by the award of the degree of Doctor of Medicine.

As a result of this research the Surgeon General instructed that additions be made to the arrangements for the medical supervision of Service boxers. When undertaking annual and pre bout boxing medical examinations all Ministry of Defence doctors are now required to ascertain that Service boxers are boxing on a voluntary basis warn them of the potential hazards of short term impairment of brain functions and invite them to undergo voluntary psychometric tests and brain scans both for personal information and as part of ongoing research.

MDG(N) has instructed that Royal Navy Medical Officers will use a standardised text when briefing Service boxers:

> The Naval medical and sporting authorities have decided that at all pre bout and annual boxing medical examinations you are to be informed that medical research on Service boxers has shown that continuing with the sport may cause minor impairment of brain function which can be revealed by special tests. Whilst the degree of impairment will vary according to the circumstances of each individual boxer in general the more bouts you fight the worse the damage is likely to be. Please confirm that you understand this and that you wish to continue boxing of your own free will. If you will not take the tests that have been mentioned you may do so by asking your own Sick Bay to make the arrangements.

This text is to be available to all Medical Officers when conducting the examination and is to be read to each boxer. The examining Medical Officer is then to sign the boxer's individual Boxing Booklet in the usual way additionally printing WARNED to confirm that the statement has been read to that boxer.

MOD's action to call the attention of service boxers to the risks and make specialist tests available at their request unheralded in the media has a striking similarity to the actions taken some time later by the controlling authority for professional boxing. The principal difference lies in the brain scan being compulsory for the professional boxer while the tests are voluntary for Service boxer all amateurs who bear the onus of their initiation.

In this edition of the Journal Paul Kemp now Consultant in Nuclear Medicine at Addenbrooke's Hospital Cambridge has responded to my invitation to review the literature to assist the Journal's readers to draw their own conclusions about the future of boxing. He concludes that the jury is out.

It is essential that the evidence required for society in general and the Royal Navy in particular to reach a correct decision about the future of amateur and professional boxing is provided by independently conducted high quality research and that the outcome is based on a complete and objective review rather than the power of advocacy. It is hoped that the Royal Navy may continue to make a significant contribution to that work.

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Member of the Association of Service Newspapers

Updates

Achievements and unfinished business

Dionysus drove Lycurgus mad who taking his son Dryas for a vine and seizing an axe lopped off arms and legs to prune him

Much has passed since the last Update. That we are this far down the road and yet have still unresolved the vital questions of training recruitment reserves terms and conditions of service for our personnel and many other concerns is perhaps our surprising. What is surprising to me is what we have managed to achieve and that to making those achievements we have I believe contained what could have been a fatal blow to one which is capable of giving the RNMS a very solid basis to face the inevitable and continuous pressure to squeeze every last drop of savings and rationalisation out of the defence budget.

In order to give you a flavour of where we are I would like first to set out the various authorities and groupings that keep a weather eye on our progress. These include the DCS 15 Steering Group comprising amongst others the Surgeon General the three MDsG and senior representation from the Department of Health (DoH) the Defence Medical Emergency Steering Group which includes the Presidents of the Royal College of Surgeons Physicians General Practitioners and Psychiatrists the Deputy Chief Medical Officer (DoH) the Chief Medical Officer (Scottish Office) the Commissioner in Chief of St John Ambulance and the Chairman of the British Red Cross Society and finally the Principal Personnel Officers Committee (PPOC) comprising Second Sea Lord the Adjutant General and the Air Member for Personnel. In addition agency review teams and TLB staffs scrutinise Framework Documents and Service Level Agreements for all potential agencies.

My purpose in listing these checks and balances is to emphasise the importance accorded to successful implementation of major changes and critically the importance of getting them right in such a tight timescale against a background of evolutionary change in professional training and near revolutionary changes of provision of service in the civilian sector. The interest of the PPOC has been particularly worthwhile in ensuring that the interests of individuals in this maelstrom of activity have been recognised and understood and we have much to be thankful for in their unstinting efforts on behalf of all our serving personnel.

I indicated before that there was still much unfinished business this is true but there is good progress in many areas of the RNMS and I am very encouraged by the professionalism and continuing dedication of our personnel in the face of it. What it is worthwhile saying is that the needs of patients and staff have all times come top of the list and I firmly believe and as I have often said in the past that the RNMS will be left in a much firmer footing after all the dust has settled.

To give you an idea of the length and breadth of the change that is currently under way I have

listed all the activities which are passing through my in tray on a day-to-day basis, the list is long, but I think worth repeating to give you an idea of what is going on. Firstly the Defence Radiological Protection Service is on track to join the Defence Evaluation and Research Agency, as part of that trading agency, by 1 April 1996 whilst remaining on the INM site. The Medical Supplies Agency is due to launch in February 1996. HQ Staff from DMSD have been integrated into the existing management structure at DMFD Ludgershall. The Scheme of Complement for the Royal Hospital at Haslar has been agreed and the RN component issued. The Agency review process for secondary care continues to make progress with a target date of 1 April 1996. The migration of staff to RNH Haslar and the MDHUs at Frimley Park and Peterborough is gathering momentum as are Service patient referrals to clear the anticipated back log. Work continues to rationalise both the training sites and courses with an expectation that the Medical Training Centre will be located at Keogh Barracks and the Medical College possibly at HMS *Dolphin* where nurse and OTT training should already be located. The current Representative Body has been in negotiation with the NHSE on the application of the Calman reforms to the Armed Forces. Triservice Consultant Advisers in all the major clinical specialties have been appointed who will be responsible to the Surgeon General through the Chief Executive of the Secondary Care Agency for all policy matters relevant to provision of services within their clinical specialty and to the Triservice Dean (Surgeon Commodore Jenkins) for all training matters. For the other two medical services QEMH (Woolwich) has been sold to the Greenwich Health Trust, the closure plan for CMH (Aldershot) is proceeding and clinical activity at Wroughton and Halton has ceased with closure expected by 1 April 1996. The RAF Institute of Pathology and Tropical Medicine, adjacent to the hospital at Halton is also closing within this timescale.

Progress is being made to accurately define the size, shape and skill mix required of our Volunteer Reserves and identify the Higher Readiness Reserves required for the future. In addition equipment is being obtained to help the RNR improve the realism and quality of their professional training. The hyperbaric chamber sited at Haslar on a joint venture with the DRA will be operational by the end of January and authority has been given for the resiting of the cold tank from Seafield Park to the INM. The Submarine Environmental Chemistry Unit will also move there from its Fasney location.

Finally and most importantly the success of all these changes depends almost completely on the continued support of the RNMS personnel who are required to continue to provide a peacetime service for secondary care in either a Triservice or a NHS environment maintain high quality training and be prepared to deploy to support the operational task.

A Craig
Surgeon Rear Admiral
Medical Director General (Naval)

A change in Fleet TLB Headquarters

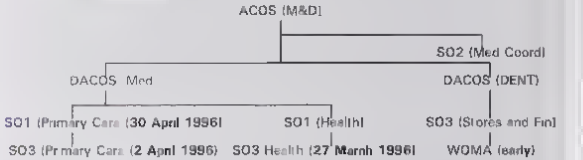
There have been a number of major changes in the way Headquarters support is to be provided to Fleet. As of 1 April 1996 the Fleet Medical Department will take on the combined functions of medical advice to all the Fleet Type Commanders. This means that Flag Officer Surface Flotilla (FOSF), Flag Officer Naval Aviation (FONA), Flag Officer Submarines (FOSM) and HQ Royal Marines will retain only limited medical staff for specialised functions and that medical planning and policy will centre on Northwood. In particular SO1 (Primary Care) will take over the functions of the Surface Flotilla Medical Officer the FONA responsibilities will pass to ACOS(M&D) and President of the Central Air Medical Board SMO(SM) at the Institute of Naval Medicine will absorb some specialist submarine work and the President of the Central Royal Marines Medical Board will be ACOS(M&D) or DACOS(Med).

These changes coupled to the establishment of a Permanent Joint Headquarters (PJHQ) at Northwood and a physical move of officers signify a period of considerable turbulence for the Fleet Medical and Dental Division. The medical cell of the PJHQ will have naval representation but it is intended that all matters that require naval input will be channelled through the single Service medical staff and work is in hand to ensure that the correct channels of communication are established and adhered to.

The major functions which the Department undertakes are:

Operational medical planning for the Fleet

Key Appointments – Reorganised Fleet Medical and Dental Division



Notes

1 Billets with dates in brackets have a start date of 1 April 1996. Date in brackets is present estimate when personnel will arrive in post.

2 Type Commanders billets also gapped
a FOSF – SURFLOTMO (December 1995)
b FOSM – SFMO (September 1995)
c FONA – CMO (June 1995)
d HQRM – ACOS(MED) (December 1995)
– SO3(MED) (May 1995)

including the identification of the requisite levels of afloat medical support to Fleet units

Ensuring the provision of dental care to the personnel of Fleet both at sea and ashore so that the maximum numbers of personnel are rendered dentally fit for seagoing duty

Advising on the allocation and deployment of dental officers

Providing specialist advice to Procurement Executive (PE) Commodore Naval Ship Acceptance (CNSA) and Type Commanders on occupational medicine hygiene environmental health occupational safety and communicable disease

Advising the PE CNSA and Type Commanders on policy for sickbay design and the provision of medical and dental facilities including new build) in ships submarines and all establishments in both CINCFLEET and 2SL/CNH

Conducting pre and post refit medical and health and safety inspections

Coordinating matters relating to medical nuhdisation equipment and medical material management Input to VCDS LTC on medical nuhdisation material

Advising on the implications of Chemical and Biological Warfare (CBW) and informing the RN Medical Branch on CBW matters so that they are organised equipped and trained to function in a hostile NBCD environment

Input to Books of Reference FLAGOS NATO Publications DCIs and other periodic instructions

Input to the LTC process

It may be of interest to touch on a few current issues within Fleet Consequent to the Defence Cost Studies although peacetime medical support remains similar to previous levels overall uniformed support has been reduced to that which is required for the National Maritime Contingency Force (NMCF) In addition to the changes in HQ staff outlined earlier some reductions have been made in sick bays principally those in RFA *Argus* will in future have all heavy medical equipment on board This will leave only the personnel and limited shelf life medical stores to be moved to the ship should the hospital complex require activation

Much work has been completed on Medical Operations Doctrine in the past two years The bulk of this has originated in the Fleet Medical Department (some in its NATO guise) and gives extensive guidance on operational medical support Finally while it has remained difficult to conduct medical serials within planned national and NATO exercises a biennial ARGUS PCRS exercise in conjunction with the Medical Squadron of the Commando Logistic Regiment is programmed for September 1996 in association with EX COLD COMPRESS in Denmark and is likely to be useful LIVEX for medical staff EX RADIANT SUPPORT an annual NATO logistic SYNEX provides an opportunity to examine the planning of medical support and the control and tracking of casualties

M P W H Paine QHS
Surgeon Commodore
ACOS(M&D) CINCFLEET

J roy nav med Serv 1995 81 179

Royal farewells and warm welcomes

Well the sight of QARNNS officers wearing gold lace and QARNNS Branch Badges is now commonplace and for most people the change has been of benefit DNNS obviously looked the part as on the first occasion she wore her new badges in the Naval Base she was asked for directions to an obscure workshop

HRH Princess Alexandra as Patron of QARNNS takes a great interest in what is going on in the Service and receives frequent updates from DNNS Her Royal Highness was most concerned about the scale of redundancies in the Service and asked to meet as many redundees as possible At very short notice a visit was arranged for 1 November when 60 officers and ratings from many establishments including RNH Gibraltar were able to meet the princess in RNH Haslar As always Princess Alexandra spoke to everyone individually and said afterwards that she was pleased to have heard for herself the problems and concerns as well as the successes of the people concerned

The Matrons in Chief of both QARANC and PMRAFNS have said how welcomed their officers and ratings have been made to feel at Haslar During these potentially difficult times of lead in to the tri service concept the nursing personnel in Haslar have put much effort into providing information packs and practical assistance to their colleagues from the other two services which should provide a firm foundation of cooperation for the future Secondary Care Agency

Work continues on implementing changes required by DCS 15 and this looks set to continue for some time to come Not all changes will be complete by April 1996 but transitional arrangements are in hand to maintain progress

Individuals continue despite the indications of an influenza outbreak to provide high standards of patient care and professional education whilst continuing with their own personal interests LNN Beare from the RNDHU Dernford has

participated in a record breaking RN Cross Channel Relay Swim reading of her encounters with hovercraft and large ships jellyfish and Force 8 gales put life in Victory Building into perspective

1995 has not been an easy year 1996 will be no sinecure either but as long as we remember that our patients come first and our personnel a close second we will maintain and try to improve standards of care for service people and civilians alike

C M Taylor RRC QHNS
Captain QARNNS
Matron in Chief

So is it all pink?

This is the first opportunity that I have had to write an Update article for the Gaffer s Gazette and I seize the chance to concentrate upon the backbone of the Royal Naval Medical Service As lady luck would have it I find myself serving away from the centre and inevitably behind rather than ahead of the latest thinking curve Although the by line carries my name what follows here is the work of three other Medical Services Commanders – OC1 RNMSS DNM(Med) and MedPers1 This illustrates that whilst my job title is Officer in Charge RNH

Gibraltar and Head of Medical Services Branch in truth the Branch is now led by a team

The Medical Branch has always had a fine reputation which has been enhanced over the years through progressive improvements in teaching. This has resulted in efficient standards of performance and more confident Commanding Officers. In the wake of DCS15 these laurels may no longer be reliable resting places. It is now imperative that as changes are implemented...the RN Medical Branch remains in the Van and carries its sister Services with it. Far from accepting compromise we should continue to move forward in the pursuit of health preservation and conservation of life and fitness to fight the ship.

THE MEDICAL SERVICES BRANCH

Implementation of DCS15 recommendations caused turbulence in all branches of the Royal Naval Medical Services. The recent redundancy round will help reduce the current manpower bearing to the new requirement by April 1997. The timing of billet deletions will not always coincide with personnel leaving the Service and the inevitable result is an increase in the number of gapped billets in the short term. This should settle eventually to requirement and hearing hopefully...and by design come into balance although the assumptions taken in formulating redundancies by number and type may already be historical. RNH Gibraltar for example has not achieved its optimistic closure date and its scheme of complement has been extended for yet another year.

The OSG and RCSG proposals are well publicised and a Development Team has been set up under the Director of Naval Manning to implement them. Significant proposals that will affect the MS branches are:

- The abolition of the officers list system.
- Changes of lower deck extraction arrangements.
- Transfer of Medical Assistants (QARNNS) into the RN.
- Transfer of the MT(RMN) category to the QARNNS.
- Move to a lead provider service for the remaining MT categories.
- Timed rather than roster advancement to POMA and PONN.

The list is not exhaustive and it is important to recognise that at the moment these are only recommendations and following further in depth studies may not be implemented in full if at all.

On the promotion and advancement front there is a welcomed buoyancy. 13 POs were selected for promotion to CPO and there is a forecast of advancements to POMA/POMA(Q) and 12 to LMA/LMA(Q) over the next six months. This is extremely good news for the RNMS rating cadre and confirms that career opportunities have not diminished despite reductions in the overall strength.

In the MS Officer Branch some new jobs are likely in the various Agencies being formed and the appointer is having to be very flexible in his plot management. Despite the six redundancies which reflected the number of already end dated billets, pressure is on to raise the requirement again. It has been necessary to select four SD candidates to attend BRNC Dartmouth in May 1996. Subject to approval by DNM (OP) it is intended to have a minimum of three promotions to Lieutenant Commander (MS) in 1996. It is also hoped that we will be allowed a promotion to Commander but there are a number of outstanding issues to be resolved before this is confirmed. The signs are encouraging but no guarantees can be given at the time of going to print.

MEDICAL BRANCH TRAINING

When I entered the Royal Navy Probationary Sick Berth Attendants, after Part 1 training, joined the Training Division housed in HMS *Dolphin II*. Accommodation comprised of double bunk beds in old messdecks saturated by the eau de diesel of bygone submariners. Classrooms were those the submarine school no longer required, supplemented by wards in Haslar (now D3 and D6) which were unused through lack of patients. Sick Berth Attendants (SBAs) were all of one cloth, divided only by a subspecialisation. When SBAs and VADs were still evident in recognisable numbers and Naval Nurses were a figment of the Matron in Chief's imagination. After 20 weeks classroom training, SBAs were flung onto the wards in either RNH Plymouth or RNH Haslar where after approximately 19 months on job experience, drafts to any one of seven Naval Hospitals, 100 plus ships and 50 plus establishments were there for the taking. How times change!

Whilst the Training Division remained on its original site with the new prefabricated Nurse Training School conjoined, an insidious evolution commenced. In 1965 SBAs were renamed as either Medical Assistants or Medical Technicians in 1971 they began to be paid what they were worth. In 1975 structured Part III training was introduced. In 1979 the medical branch and nurse training elements formed up as the Royal Naval Medical Staff School and in 1983 those of the State Registered Nurse and State Enrolled Nurse persuasion were, on request, integrated into the QARNNS. In 1987 came the first revolution — a purpose refurbished building in the grounds of the Naval Hospital was opened as the RNMSS providing excellent facilities for a now fully combined school to produce high quality Medical Assistants, Medical Technicians, and Naval Nurses. The past eight years have seen a number of enhancements to the school enabling the production of an even higher quality of training — but then came the second revolution — **The Defence Cost Study!!**

So what of the future? The DCS implementation procedure grinds on and as in-service training beckons, does the RNMSS devolve to classrooms and accommodation blocks no longer required by old submariners or to blocks in the Naval Hospital no longer needed for patients or to an Army or RAF training establishment with space to accommodate it? By the time you read this a decision may finally have been promulgated with the speculation that basic MA/MT theory training and First Aid/First Aid Instructor training will be undertaken away from the Gosport area, with MA clinical placements the bulk of the career and short courses and MT training remaining in close proximity to the Defence Medical Services Core Hospital.

So what of the present? At the time of writing there are only 28 MA/MA(Q)s and nine MTs at varying stages of their basic course. At a time of manpower balancing in the recent redundancy round only 16 MAs and 2 MA(Q)s joined for training in the 1996/97 Recruitment Year. Next year the target is four MAs and 20 MA(Q)s but no MTs. In addition to basic training RNMSS continues to carry out the usual multitude of career and professional courses all designed to prepare the student for his operational role.

Training initiatives underway include work on National Vocational Qualifications where all Medical Assistants could be given the opportunity to work towards NVQs in both the Care and Administration sectors through Credit Accumulation Transfer (CAT) and Accreditation for Prior Learning (APL). After a period on the "back burner" involvement in the Ambulancemen NVQ discussions has recently been resurrected as has the initiative towards Surgeon/Physician's Assistant. Work is ongoing with the Royal College of Surgeons on the Pre-Hospital Trauma Life Support certification for both Instructors and students. In order to aid these initiatives a Medical Assistant Personal Development Portfolio has been introduced and the need to qualify increased numbers of Assessors and Verifiers addressed.

First Aid training in the Royal Navy has recently been reviewed following a Seminar held in RNMSS in June 1995. Instructional specifications and the training pamphlet have been updated to include new European Resuscitation Council directives and an Instructor's Log introduced.

As stated before, all RNMSS activities are being carried out against the background of in-service training uncertainties. However the work will be carried forward into any newly formed training organisation. The need to produce good quality Medical Assistants and Medical Technicians both male and female in support of Fleet operations remains the major factor and key driver.

D F Shine
Commander Royal Navy
Head of Medical Service Branch

J roy nav med Serv 1995 81 182 189

Debating point

A critique of published studies into the effects of amateur boxing: Why is there a lack of consensus?

P L Kemp

It has been well known for many years that professional boxing is associated with the chronic sequel of the Punch Drunk Syndrome — Demientia Pugilistica [1] It is however unclear as to whether there are any long term neurological effects from amateur boxing The detailed results of the study into Service amateur boxing have been published recently in a doctorate thesis and the medical literature [2 3] The results of this study revealed significant differences in two aspects of neurophysiology to the detriment of the boxers as compared to an aged matched group of non boxing sportsmen in the Armed Services The investigators concluded that these differences were most probably attributed to the effects of boxing These findings are at variance with some but not all major studies published in the literature

To shed some light on these differences it is necessary to scrutinise carefully the methodology and interpretation of the data of the published studies rather than to passively accept the authors conclusions Regrettably there are considerable shortcomings in many of the studies an unfortunate situation given the highly emotive and contentious arguments generated by the pro- and anti boxing fraternities This critique will attempt to discuss the strength and weaknesses of the findings of these studies

SOURCES OF METHODOLOGICAL FLAWS

In order to assist readers in their assessment of the validity of the conclusions from these studies it is important to appreciate how serious methodological flaws can arise (*Table 1*)

Table 1 Potential methodological deficiencies in amateur boxing studies

1	Selection bias in the recruitment of boxers
2	Extraneous head injuries incurred outside the boxing ring
3	Comparing the results of the boxers investigations with established norms
4	Selection of appropriate controls
5	Statistical analysis and chance findings from multiple investigations
6	Selecting appropriate neuro investigatory techniques
7	Recruiting ex amateur boxers who have turned professional

Selection bias in the recruitment of boxers

Selecting a representative sample of boxers from the sampling frame provides the most difficult challenge to the investigators and is the factor most likely to be responsible for the major weakness in all studies Requesting volunteers from amateur boxers may bias the sample investigated in several ways

(a) Active boxers who may feel impaired as a result of the sport may be reluctant to volunteer in case the results of the investigations reveal detrimental findings leading to the possible withdrawal of an individual s boxing licence

(b) Successful boxers who may have taken relatively less punishment in the ring may be more likely to volunteer in order to demonstrate to the medical authorities that there is no reason for concern in their sport

(c) In a study of retired boxers those former participants who have neurological

Surgeon Lieutenant Commander Kemp has newly retired from the Royal Navy and is now a Consultant in the Nuclear Medicine Department at Addenbrooke s Hospital Cambridge

complaints, e g headaches memory impairment may be more likely to volunteer in order to get checked out for either reassurance or potential litigation It is also conceivable that if amateur boxing can precipitate pre senile dementia then ex boxers who are so impaired may not be able to volunteer or be traced

In every trial there is always a degree of selection bias It is unrealistic to assess every amateur boxer who participates in the sport as the neurological investigations are expensive and time consuming A reasonable alternative is to attempt to investigate all boxers who belong to a particular team or a club As it is necessary for all boxers to provide informed voluntary consent it is necessary to establish beforehand that all members of the club are willing to participate in the trial

Extraneous head injuries incurred outside the ring Boxers who have sustained a significant head injury outside the ring should not be included in a study as it is impossible to attribute detrimental findings to the effects of boxing alone In a study of retired boxers it will be necessary to consider additional aspects of their lifestyle e g alcoholism

Comparing the results of the boxers' investigations with established norms Cross sectional studies comparing the results of the boxers investigations with established population norms will lead to spurious results unless the population normal range was based on an appropriate non boxing population with similar background variables age education social class etc As this situation is highly unlikely it is inappropriate to use established population norms to define the limits of normality for the boxing fraternity

Selection of appropriate controls Given that the use of population norms is inappropriate the question should now be considered as to what constitutes an appropriate control? Twin studies in which one twin boxed and the other did not would be ideal as many of the background variables would be similar However in the absence of this situation it is important to consider what background variables need to be matched between the boxers and the control groups Age and sex are obvious factors Additional factors will be governed by the nature of the investigations intellectual level, employment status social class of boxer and sporting level are just a few of the variables that may need to be considered The more factors that need to be matched between the boxing and non boxing groups the greater will be the difficulty in finding controls

Statistical analysis and chance findings from multiple investigations The greater the number of investigations used to compare the group of boxers to non-boxing controls will, according to fundamental laws of probability theory lead to a greater chance of finding significant but spurious differences between the two groups For example if six independent investigations are utilised to compare the group of boxers and non boxers there is at least a one in four chance of finding a significant but spurious difference between the two groups (in statistical parlance this is a type I error) Consideration must also be given to the covariance between the different investigations e g the cerebral perfusion images of the brain obtained by Tc 99m HMPAO SPECT scanning are highly akin to the images obtained from using I 5, PET scanning consequently it would be inappropriate to utilise these two investigations in the same study

Applying the appropriate statistical techniques to the analysis of the data is of fundamental importance e g the results of psychometric testing of groups of boxers and controls with similar distributions of ages and intellectual level may still need to be adjusted for the covariates of age and intellect *even though the two groups are well matched for these variables*

Selecting appropriate neuro-investigatory techniques *Table 2* lists the array of neurological investigations that can be used to investigate the brains of amateur boxers As mentioned previously it is prudent to utilise only

Table 2 Techniques available for the investigation of the potential effects of amateur boxing

Clinical examination
Psychometric testing
Electroencephalography (EEG)
Evoked responses
CK BB isoenzyme measurement
Computerised tomography (CT)
Magnetic Resonance Imaging (MRI)
SPECT and PET functional cerebral imaging

a small number of investigations in order to minimise the possibility of chance findings. Not surprisingly in well funded projects there must be considerable temptation for the investigators to employ as many different techniques as possible. Prior to embarking on a study investigators must be aware of the relative sensitivities of different investigations for detecting the effects of closed head injury – the potential insult incurred by boxers. Apart from knowing the sensitivity of the various investigations it is equally important to have a firm understanding of the specificity of the techniques i.e. being able to demonstrate normality in healthy individuals.

Investigating ex-amateur boxers who have turned professional. Investigating ex amateur boxers who have subsequently turned professional is highly inappropriate in a study designed to assess the safety of amateur boxing. Although all professional boxers will have commenced their careers as amateurs, professional bouts are for 12 rounds compared to the three in amateur boxing and success in professional bouts may be crucial for the pugilist's income.

ASSESSMENT OF MAJOR AMATEUR BOXING STUDIES PUBLISHED IN THE LITERATURE OVER THE PAST 16 YEARS

Table 1 summarises the findings of amateur boxing studies published in the literature since 1979. Each study will now be considered individually to assess the degree of validity of the investigators conclusions. The reader will find it helpful to refer to *Table 1* whilst reading the text.

Thomassen *et al*[4] Denmark (1979). One hundred and fifteen retired boxers were sought to participate in this group comparative study. Fifty three boxers agreed to participate and 53 ex professional footballers formed the control group. The controlling factors included age schooling education and most surprisingly a history of previous head injury. This last factor was required as over 75% of the boxers had sustained extraneous head injuries outside the ring, consequently a similar proportion of footballers who also gave a history of traumatic head injury was sought. Obviously the effects of boxing are going to be difficult to differentiate from the effects of the extraneous head injuries in the boxing group. Given the high incidence of cerebral trauma, it is not surprising that 40% of the total EEGs (boxers and footballers) were abnormal. However no information is given about the relative contribution from each group. On clinical examination seven of the controls were noted to have abnormalities compared to 19 boxers ($P<0.05 - X^2$ with Yates correction). However the authors concluded that *as the results of the investigations were similar in the two groups then existing safety precautions protect the boxers against serious and permanent brain damage*. This conclusion needs to be interpreted with extreme caution given the high prevalence of extraneous head injuries in both groups.

Brooks *et al*[5] Scotland (1987). Seventy five active amateur boxers were approached to participate. 29 agreed. Nineteen controls were recruited. 11 were prospective amateur boxers who had not sparred up to the time of the study. The investigators administered 22 psychometric tasks to assess the two groups and noted that the controls performed significantly better on two tasks, boxers significantly better on one task, while the remaining 19 tests showed no difference. After controlling for intellect (the boxers were more able than the controls) and repeating the analysis, controls performed significantly better on four tests with no differences in the remaining 18. The authors concluded from this good study that *there was no evidence of neuropsychological abnormalities in those boxers studied*. However they did go on to note that only 39% of those boxers invited actually participated in the study, and it could not be excluded that those who refused may have had a subjective awareness of impairment. The investigators emphasised that *retirers must represent a high priority for research before concluding that amateur boxing is not dangerous*.

McLatchie *et al*[6] Scotland (1987). This study was designed primarily to assess which neurological investigations would be the most sensitive in investigating young amateur boxers. Twenty active boxers were investigated with a variable number of controls. Clinical examination was abnormal in seven out of the 20 boxers, however no controls were examined. The authors point out that *these findings need to be interpreted with extreme caution as the abnormalities were looked for so intently*. There were EEG abnormalities in eight out of the 20

Table 3 Major studies assessing the safety of amateur boxing

Investigators	*Participants*	*Bouts*	*Age*	*Years Boxing*	*Investigations Findings*	*Comments*
Thomassen *et al*[4] Denmark 1978	53 former boxers 53 matched controls	19 200	Not given	3 18	No significant differences on clinical examination EEG or psychometric testing	These findings are compounded by the fact that 68% of the controls and 75% of the boxers taste and head injuries outside the ring
Bonnke *et al*[5] Scotland 1987	28 active boxers 19 controls	2 96	15 17	1 13	No significant differences on psychometric testing	Only 38% of active boxers participated Controls matched for age education and site city
McLatchie *et al*[6] Scotland 1987	20 active boxers variable number of controls	4 200	16-45	Not given	Abnormal clinical examination in 35% of boxers abnormal EEG in 40% of boxers abnormal psychometric testing in 83% of boxers	No controls underwent clinical examination or EEG University staff used for controls for psychometric testing
Jordan *et al*[7] USA 1989	8 active boxers	4 32	18 26	1 9	Normal MRI in all boxers	Maximum number of bouts was 32
Haglund *et al*[8 11]	50 former boxers 50 athletes	0-180	20-40	1 17	No significant differences on clinical examination CT MRI EEG showed significantly greater abnormalities in boxers	Although the authors concluded that amateur boxing appeared safe the differences on EEG examination remain unexplained
Heilbronner *et al*[9 12] USA 1991	50 active boxers	0 50	16 30	Not given	No difference between pre and post fight psychometric testing	Only 23 boxers turned up for post fight testing presumed absence of losers failed to turn up
Butler *et al*[3] England 1993	88 active boxers 31 water polo the 47 rugby players	0 75	12 26	0 8	Significant differences between boxers and controls as to psychometric testing to the detriment of the boxers Improvement with sequential assessment No differences on clinical examination evoked responses EEG CK88 isoenzymes and ophthalmological assessment	No allowance for the intellectual differences between the controls (teams were all university students) and the boxers (mainly from school leaving) hence psychometric data discounted Authors conclusive no evidence of damage in boxers
Stewart *et al*[5] USA 1994	484 amateur boxers	Not given	13 21	Not given	Significant test retest differences psychometric testing ability and number of bouts No details given on 2 year follow up	Authors give caution as the interpretation of the negligible findings as a longer absence may be may be required before effects are manifest
Kemp *et al*[2 3] England 1994	1135 active boxers 34 controls 115 ex active boxers 27 controls	0 250	18 30	0 17	Boxers had significantly more abnormalities on Tc 99m HMPAO cerebral perfusion imaging Psychometric testing revealed boxers to perform significantly worse than controls and on retesting these boxers with the greater number of bouts performed significantly worse than those with few bouts	All boxers participated thus reducing selection bias Subjects with extraneous head injuries were not included Controls matched for age and education School attainment used as a marker for intellect Boxers participating full time bears at a high level

boxers no controls were examined Psychometric testing revealed abnormalities in over half the boxers however it appears that the controls for this investigation were recruited from hospital out patient departments and amongst university students and staff — not an ideal control group[1] Given that this study was designed primarily to assess which techniques were the most sensitive for detecting cerebral dysfunction in boxers the findings need to be interpreted in that light However it was noted by the investigators that *those boxers with the greater number of bouts had a larger number of abnormal investigations*

Jordan *et al*[7] USA (1988) All nine boxers involved in this study were under 90 days suspension for either being knocked out or having received excessive head blows The authors did not state how many boxers were invited to participate initially Although all MRI scans were normal it should be borne in mind that only nine boxers were investigated in whom the maximum number of bouts was only 32

Haglund *et al*/Murchus *et al*[8-11] Sweden (1990) This expensive study was sponsored by the Swedish Government and 50 retired amateur boxers together with 50 ex soccer players and retired athletes were recruited The 50 boxers represented 43% of those invited to participate CT NMR auditory evoked potentials and psychometric testing revealed no significant differences between the groups However EEG examination was abnormal in 34% of the boxers as compared to only 16% of the controls ($p<0.05$) The authors concluded that *as most of the investigations had not shown differences between the groups then overall the study did not reveal significant signs of neuropsychological impairment*

However they went on to state *that the EEG differences between the groups may be a sign of slight brain dysfunction*

Heilbronner *et al*[12] USA (1991) An unknown number of boxers were invited to participate in pre and post fight psychometric testing In total 50 boxers underwent pre fight testing but less than half presented for post fight reassessment The authors noted a preponderance of losers in those who failed to turn up[1]

The results of those boxers who underwent both pre and post fight psychometric testing revealed impairment in some tasks with improvement in others However these findings need to be interpreted carefully as the investigators are only trying to assess the effects of a single bout Furthermore it is only to be expected that the boxers would be in a high state of autonomic arousal both pre- and post fight which could possibly mask the detection of any subtle cognitive effects due to the bout

Butler *et al*[13] UK (1993) Eighty six boxers volunteered from a sampling frame consisting of local amateur boxing clubs — it is unclear as to how many boxers were approached initially Eighty eight water polo and rugby players acted as a control group No differences were found on clinical examination evoked responses EEG brain specific creatine kinase (CK BB) isoenzyme and ophthalmic assessment Analysis of the psychometric data without adjustment for covariates revealed that of the 12 psychometric tasks administered differences to the detriment of the boxers were noted in all tests of which eight were significant ($p<0.05$) The authors noted that as a proportion of rugby union and water polo players were attending the local university or studying higher grades at school whilst the sample of boxers were on the whole early school leavers a definitive comparison could not be undertaken without some estimate of intellectual function Unfortunately as no information was available for these estimates of intellect a definitive analysis of the data could not be undertaken A correlation analysis within the group of boxers between psychometric test performance and number of bouts did not reveal any significant trends However as the authors correctly note *the effects of boxing would have to be large to emerge as significant against the background of premorbid variation in ability*

Although the authors concluded that the results of their study did not reveal any evidence of neuropsychological dysfunction due to boxing it must be remembered that the data from arguably the most sensitive investigation of closed head injury namely psychometric testing could not be formally analysed

Horner *et al*[14] Ireland (1993) Eight Olympic boxers had blood samples taken pre and post bout Significant increases were noted in CK BB and neuron specific enolase (NSE) The former was attributed to astrocytes release and the latter to release from mature neurones Seventeen oarsmen acted as controls The authors claimed that they did not show significant increases in the corresponding enzymes and concluded that the increase noted in the boxers indicated

damage to cerebral cells as a consequence of boxing

Careful scrutiny of the data presented in the paper reveals the unrsmen did show a rise in their CK BB enzyme however this increase did not quite attain statistical significance ($p=0.1$)

There is also evidence in the literature that CK BB rises in marathon runners [8] who like the oarsmen are not prone to cerebral trauma Obviously if competitors from non contact sports are also demonstrating increases in the CK BB isoenzyme it is difficult to see how this phenomenon can be solely attributed to cerebral tissue damage

Stewart *et al*[15] USA (1994) This most impressive and highly expensive prospective study over a long year period assessed 484 amateur boxers This represented two thirds of those initially invited to participate Psychometric testing was undertaken at commencement of the study and repeated again two years later The psychometric data were analysed with the inclusion of covariates such as age race education prior drug test results and reported concussive head injuries from causes other than boxing Assessment of the psychometric test performance at the start of the study with number of bouts fought showed a significant trend in some aspects of cognitive dominance in that those boxers with the most bouts performed least well Over the two year follow up period no significant deterioration was demonstrated The authors stated that *this may reflect a need for a much longer latency period before the effects of boxing may be manifested* The investigators are currently reassessing the data from this trial to determine whether the relatively less stringent safety rules prior to 1986 may have been responsible for the significant detrimental findings in those boxers with the greater exposure

Kemp *et al*[1,2] England (1994) In this investigation we recruited amateur boxers from the Royal Naval and Army Service boxing teams At the time of request all boxers representing their Service voluntarily agreed to participate thus minimising selection bias We recruited Servicemen controls who were of a similar age and educational attainment to the boxers and in addition participated regularly in sporting activities

This study showed that the group of boxers had significantly greater aberrations in cerebral perfusion than the controls Whether these aberrations are transient or permanent remains unknown

Analysis of the psychometric test scores with age and school attainment as covariates revealed significant detrimental findings in the group of boxers as compared to the non boxing sportsmen Furthermore it could be shown that within the group of boxers there were significant trends between some aspects of psychometric testing and number of bouts fought

A potential weakness of this study is the use of the covariate *school attainment* as a marker of intellectual ability None of the boxers had had his IQ evaluated whilst at school School attainment has been shown to correlate significantly with IQ [7] so it seemed appropriate to use school attainment as a measure of their pre morbid intellectual ability Statistical modelling of the psychometric test results revealed that school attainment was an essential covariate to be included in the model

The detrimental findings clearly demonstrated in this study may be a consequence of the group of amateur boxers whom by virtue of boxing *full time* may be more exposed to the cumulative effects of closed head injury Furthermore this cohort of boxers fight at a comparatively higher level of ability than most civilian clubs with the potential consequences of harder and more accurate blows

DISCUSSION

It should be quite obvious to the reader that there is no clear consensus about the effects of amateur boxing from the *conclusions* of the boxing studies published in the literature However it is quite apparent that the methodology involved in some studies leaves a lot to be desired Cross sectional studies whereby boxers are compared to a control group will always be open to some form of criticism of the factors used to match the two groups Longitudinal studies in which the boxers are followed up over a period of time are perhaps the most ideal but the follow up period may have to be far many decades to detect a latent effect The effects of ageing will need to be considered especially when using psychometric testing Given that the rate of decline of cognitive speed is a function of baseline intellect a measure of intellectual ability will have to be incorporated Furthermore with all investigatory techniques extraneous head injuries or changes in lifestyle (e g alcoholism) will invalidate the data accrued over the years Consequently although longitudinal studies may appear ideal

in theory in practice the results of such trials would be vulnerable to as many criticisms as cross sectional studies Given that all boxing trials are and should be based on volunteers there is always going to be a problem of selection bias It is not surprising that with all these factors to be taken into account it is impossible to construct a trial that is *100% sound* Consequently, one has to consider the *balance* of the evidence available

It is interesting to note that the Royal Navy study[7] and the 1 5 million dollar American study[14] both showed similarities in that certain aspects of psychometric testing ability appeared to be inversely related to the number of bouts fought The American investigators are currently reassessing their data to assess whether changes in the safety rules of amateur boxing (introduced in 1986) are compounding their findings Unfortunately the psychometric data from Butler's study[13] could not be formally analysed In contrast the studies by Brooks[5] and Haglund[8] did not reveal significant differences on psychometric testing although the former study was relatively small in numbers and both studies are open to the criticism of selection bias The Royal Navy study also showed that boxers had more aberrations in brain blood flow than non boxing amateur sportsmen of a similar age To date no other study has used functional imaging techniques e g HMPAO SPECT or PET studies to assess the brain so this finding currently stands alone CT and NMR demonstrate cerebral structure as opposed to function and are relatively less sensitive at demonstrating the effects of closed head injury [6 9] Although Haglund s studies[8 10] did not show any differences on psychometric testing it did reveal boxers to have significantly more abnormalities on EEG examination than the sporting controls

CONCLUSION

I would strongly recommend that future investigations should restrict themselves to one or two investigatory techniques in assessing amateur boxers namely psychometric testing and/or functional brain imaging (positron or single photon emission tomography) Unfortunately the former investigation will always be open to some form of criticism as to which covariates and controlling factors should be employed and the latter investigation is restricted by the availability of specialist centres and in addition by the limitations of radiation exposure

At present from the studies published in the literature it is not possible to conclude that there is consistent evidence of cerebral damage from amateur boxing Conversely it is certainly not possible to give amateur boxing a clean bill of health Pro-boxing enthusiasts may argue that in the absence of consistent findings the jury should remain out about the safety of amateur boxing Readers will need to judge the evidence for themselves

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RESEARCH ABSTRACT

S D Hutchings A study of the Instantaneous Collection Efficiency of the Cobe Spectra cell separator in peripheral blood stem cell transplantations *Fourth year study report* 1995

Background Haemopoietic stem cells collected by leucapheresis can be used as an alternative to bone marrow transplantation following high dose chemotherapy in the treatment of several malignancies This study looked at the Cobe Spectra cell separator An important feature of these machines is their collection efficiency (CE) which is a measure of their effectiveness in collecting stem cells *Instantaneous* collection efficiency (ICE) is a measure of the collection efficiency at one specific point in time rather than the *overall* collection efficiency of the whole procedure Studies have shown the overall collection efficiency of the Cobe to range from 43% to 77% No study has addressed the instantaneous collection efficiency of the Cobe

Aims

1 To determine the ICE of the Cobe Spectra with respect to both Mononuclear cells (MNC) and Colony Forming Units — Granulocyte/Monocyte (CFU GM)
2 To investigate factors which may cause variations in the collection efficiency over the course of a leucapheresis procedure

Method All patients undergoing leucapheresis on the Cobe Spectra were included in the study Blood samples were taken from the inlet and return lines of the machine at four regular intervals during each procedure A full blood count provided the levels of mononuclear cells CFU GM levels were ascertained using methyl cellulose based colony forming unit assay Instantaneous CE was calculated by determining the depletion of cells between the inlet and return lines at each point in time

Results Eight leucapheresis procedures were examined Mean Instantaneous CE for MNC was 81 58% (Range 44 32% 98 08%) Mean Instantaneous CE for CFU GM was 73 46% (Range 16 47% 100 00%) There was no significant variation in the ICE over the course of the procedures Instantaneous CE did not show any significant variation due to changes in numbers of MNC or CFU GM in the inlet line There was a relationship between collection efficiency and machine separation factor (SF) which is a function of inlet line flow rate and centrifuge spin speed This relationship suggested that the optimal SF for collection of MNC and CFU GM is between 600 and 800

Conclusion The Cobe Spectra is operating at a high level of efficiency with regard to the collection of both MNC and CFU GM This study found that patient variables (e g Pre apheresis WBC or MNC count number of MNC/CFU GM in the inlet line patient blood volume disease stage or sex) do not cause any significant variation in the ICE of the Cobe Spectra

This study found that machine related variables of which separation factor is the most important are very important in producing an optimal collection efficiency We found that an SF of between 600 and 800 produces an optimal collection efficiency for both MNC and CFU GM

Surgeon Sub Lieutenant Hutchings is a Medical Cadet at the University of Southampton Medical School

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Operational Medicine

'Hands to Boarding Stations': Life in the Adriatic as part of Operation Sharp Guard

D W Potiphar

In May 1995 HMS *Glasgow* became the latest Royal Naval ship to enter the Adriatic and take part in Operation Sharp Guard which aims to enforce the UN arms embargo against the former states of Yugoslavia

We are now a little over two months into the deployment and are fully integrated into the NATO Task Group awaiting developments ashore Though at the time of writing tension has increased ashore with the Serbian advances on Srebrenica and Zepa it has yet to have a significant impact on our daily routine which is both varied and diverse depending on the area that we are patrolling at any one time Operation Sharp Guard units are split into two Task Groups operating in areas off Dubrovnik and Southern Italy known as Montenegro and Otranto respectively

In Montenegro the NATO force sits off the coast of Bosnia monitoring activity around the main port of Dubrovnik and the surrounding coast line During these patrols we are closed up in defence watches ready to act to anything that may occur Most departments are following a 6 hours on/6 hours off routine This includes the Medical Department which means that one of us is up at any one time throughout the day to see fresh cases as they arise A normal fresh cases clinic is impractical in this environment The majority of our time in area Montenegro part cularly for the Warfare Department is spent watching and waiting for anything to happen As such personnel have more time to think about minor ailments and consequently present themselves to the sickbay with things that they would normally have let run their course e g minor colds

HMS *Glasgow*

First Aid training has also been a problem during this routine due to the lack of free time if personnel are not closed up in their defence watch position they are asleep eating or writing letters Finding a period when personnel and in particular the first aid teams are available has proved difficult though not impossible The First Lieutenant has been very supportive providing time to teach first aid to those personnel on watch who can be spared for half hour slots This has normally been in the small hours of the morning but as one of us is always up it has not posed a problem Also with the news that some form of chemical weapon had possibly been used in Bosnia it was decided to have a series of NBC lectures over a five day period to get everyone back up to speed One lecture was on medical aspects but had to be given ten times over a 24 hour period so that all personnel had at least one chance to attend

Area Otranto is completely different We patrol around the entrance to the Adriatic and carry out a surveillance role identifying and boarding if necessary all vessels that enter the

At the time of writing Surgeon Lieutenant Potiphar was Med cal Officer to HMS *Glasgow*

Ready for action'

area The majority of the ship's company follow a normal daily routine with the exceptiou of the Warfare Departmeut who are iu enhanced cruising watches so that the Ops Room can be fully manued 24 hours a day We have no requiremeut to wear ßs iu area On tranio and can therefore wear tropicals, taking advantage of the gorgeous weather that the Adriatic has to offer at this time of year

All in all we spend roughly equal periods in each area approximately teu days iu one a port visit of approximately four days and then ten days iu the uext area It has been likeued to a Mediterranean cruise with a bit of work thrown in to keep us busy though I can assure you that ten days or more of defence watches is no cruise!

Medically we are well supported both at sea and ashore The CVS is uever more thau one hour s flight away and they are readily avatlable to talk over problems aud offer advice Most of the other ships iu area carry a doctor and in some cases notably the Germans they also carry a dentist and we have therefore been able to refer our dental problems to them at short notice

Iu cases where help cannot be obtained at sea there is a good casevac system tn operation through the Fleet Logistics Service at Gronaghe Italy It is a well rehearsed system having been in operattion for a few years now and offers a well supported stck bav at the air statiou itself a military hospital just outside the city limits and specialist advice at the Uuiversity Hosplta1 Bari which is a 45 mtuute drive away On the oue occasion that whea we have used them to date the service was fast and efficieut We were accompanied duriug our visit to the University Hospital by the Surgeon Commauder from Grottaglie who also acted as our interpreter Our patieut was quickly seen and treated by a consultant Luckily the rating iuvolved had uo major problem and was returned ouboard after a night iu the Grottaglie sick bay

On board our medical cases have been the uormal mixture of URTI skin and ear complaints with a few more taxing cases thrown in for good measure Due to the hot euvironmeut fuugal infectious of the feat are becomiug a uuisauce, especially for the galley staff who are contiuually standing in water due to the main drain for the deck being uphill Treatment is relatively simple to imtiate but supplies of foot powder and tropical antifungals are quickly diminishing — however it is relatively easy to get restocked usiug the well tried and tested logistics route through Bari Lectures and XTMs on foot care have beeu produced and hopefully the rewards of these will manifest themselves soon Also regular lectures have beeu preseuted on other subjects such as sun exposure STDs and Health and Safety the latter of which has still been rigorously implemeuted by the Command despite constraints imposed by beiug in au operational area

Perssually my time in the Adrtatic has been an eye opener to life at sea with Her Majesty s Royal Navy Newly out of Dartmouth and NEMOs I had to quickly adapt to Portlaad aud then the new environment of an operational ship I have been lucky enough to see and take part in many of the sertuls that the Navv can provide tncludiug air defence anti submarine warfare actiou stations and boardings plus the many little things that make the Royal Navy such au elite fighting uuit Fortuuately uone have yet to be put to the test for real but I m sure that if required *Glasgow* together with other Royal Naval vessels iu the area would do us proud

If any Surgeou Lieutenant is looking for a very quick introductiou to life in the Royal Navy and its operational capability plus some great runs ashore and a tan- theu an Adrtatic deployment may be for you — see the Appointer a s a p!

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Medical Support Troop 3, Split Croatia. Tri-Service and International

J K Campbell

FORMATION

Medical Support Troop 3 was formed in June 1995 to provide medical and surgical support in the region of Split southern Croatia During Operation Grapple 6 and previous deployments of the United Nations Protection Force a need for medical support in the Split area had been identified There were two other MSTs already in place MST1 in Zepee Northern Bosnia and MST2 in Gornji Vakuf Central Bosnia The main headquarters was based in Split with an excess of 4 000 personnel of all contributing nations The medical evacuation airhead for the Former Republic of Yugoslavia (FRY) was also situated in Split British and United Nations (UN) personnel were faced with the serious situation of requiring to be evacuated forward to MST2 or MST1 to receive surgical and medical treatment Consequently many patients were treated locally using civilian facilities or being aeromedically evacuated This was deemed to be an unsatisfactory situation

It was clear that there was a need for a UN surgical and medical service in southern Croatia For the longer term it had been agreed at government level that the German and French Armed Forces would provide a large level three facility as a field hospital Estimates for the time required to assemble such a hospital made it apparent that an interim measure was required

At the time of formation of the team for MST3 the RAMC were already very heavily committed worldwide The other two services were therefore approached to provide personnel especially for the medical staff The Royal Navy was tasked to provide one surgeon one anaesthetist one resuscitation officer a theatre sister and two Operating Department Assistants (ODAs) The Royal Air Force provided an aeromed trained RGN The remainder of the team were RAMC principally 22 Field Hospital The final formation was distinctly tri service

Surgeon Commander Campbell is currently appointed to the Department of Surgery RNDHU Derriford Plymouth

The parent unit was 22 Field Hospital RAMC which provided all the kit and a home base/parent unit

TRAINING AND DEPLOYMENT

MST3 first came together as a group for pre-deployment training at Longmoor Camp in Hampshire on 26 and 27 June 1995 This was a very useful period not least for the Naval members of the group some of whom had little experience of land-based military matters Those who had worked with the Royal Marines were reasonably confident with the military side of the training The lectures and demonstrations specific to the theatre of operations were particularly beneficial Following the training serials the group was stood down to 24 hours notice to move

MST3 was deployed on 8 July 1995 The vehicles travelled with the group The airlift was undertaken by the United States Air Force using a C3 Galaxy to Split airport in Croatia Upon receipt of the kit the MST was operational within 10 hours

OPERATIONAL SITUATION WITHIN THE FORMER REPUBLIC OF YUGOSLAVIA

Until June 1995 the deployment of UN forces within the FRY had remained basically unchanged since the formation of the Bosnian/Croatian federation in June 1994 UN forces were deployed mostly within the area of the Bosnian/Croat Federation and within Croatia itself This was changed dramatically in June 1995 with the deployment of the Rapid Reaction Force (RRF) in response to the continued Bosnian Serb bombardment of Sarajevo in particular the mortar attack on Sarajevo market where 37 people were killed

At the time of the deployment of the RRF Bosnian Serbs (BSA) held the upper hand in terms of territorial possession The Croatian Krajinas and Eastern and Western Slovonia remained in Serb hands The city of Sarajevo was encircled and under siege The Muslim safe havens of Zepa Srebrenica and Gorazde were under fire During July 1995 the BSA remained

in the ascendant. The long-oppressed Muslim enclaves of Zepa and Srebrenica came under increasing pressure and eventually fell to the BSA troops after a heavily contested campaign.

In August 1995, the Croatian Army (HV), which had long been quiescent, began an offensive which was to prove highly successful. The Krajinas were liberated in a rapid and skilfully planned offensive centred on the town of Knin displacing some 50 000 Serb civilians. Bolstered by the success of this mission the Federation forces of the Bosnian Croatians (HVO) and Bosnian Muslims (BiH) successfully pushed into Serb held western Bosnia taking the towns of Donji Vakuf and Prijedor. This offensive was complete by the middle of September 1995 having made enormous territorial gains to occupy nearly 50% of Bosnia.

In August forces of the UN multinational Brigade (principally French and British) took up positions on Mount Igmen to the south of Sarajevo adopting a more robust posture towards the BSA. Shortly afterwards a new peace initiative was launched by the government of the USA led by Mr Holbrooke. It became clear that the desired outcome was a 50/50 split of the lands comprising Bosnia and Herzegovina between the Serbs and the Bosnian/Croat federation.

The change in fortune coincided with NATO air strikes which were aimed at deterring further Bosnian Serb attacks on Sarajevo and other safe areas. As part of this process the UN demanded that the BSA should withdraw their heavy weapons from around the Bosnian capital. Initially there was strong resistance from the BSA forces led by General Ratko Mladic but the political will prevailed and he was forced to climb down and withdraw his heavy weapons. This occurred despite there being very few pieces actually destroyed by the air strikes. The BSA communications and command/control net was however severely damaged both around Sarajevo and Banja Luka. The self styled Serb capital of Pale was also heavily targeted.

Many of the territorial gains of the federation appeared on closer inspection to be the result of a planned withdrawal of BSA forces towards the likely lines of settlement. By the end of MST3's deployment the federation forces remained in the ascendant leaving only the town of Banja Luka in Serb hands within western Bosnia. The HVO/BiH forces needed to be dissuaded from pressing home their advantage and taking Banja Luka which by the end of September held some 100 000 displaced persons as well as a large number of fully equipped BSA forces.

The American-led peace talks which had begun during August 1995 gained momentum towards the end of September. They were close to reaching an agreement between all of the warring factions. The other major change mooted at this time was the complete withdrawal of UN forces, to be replaced by an Implementation Force. The nature, role and size of this force were a matter of great debate. The likeliest outcome at the time of writing would be a NATO force of about 50 000 comprising British and US forces. The role might be expected to be more robust as a peace keeping force as opposed to the more humanitarian role of the UN forces.

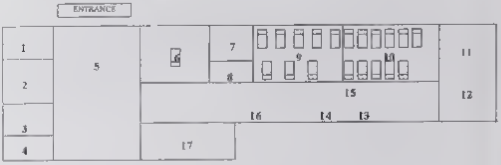
LOCATION OF MST

MST3 was situated in Divalje barracks near Split. Divalje Barracks is a large Croatian Army barracks which has been the HQ of the United Nations Support Region Split for some years. A floor plan of the building used for the MST is shown at *Figure 1*. The space, although designed as accommodation, proved very flexible. It was possible to convert both the previous accommodation areas into ward spaces for a total of 20 beds including three ITU beds. There was a large air-conditioned space available for the theatre. The end room was converted into the X ray and laboratory space.

CO OPERATION WITH AEROMED FLIGHT AND OTHER LOCAL RESOURCES

The aeromed flight had been located in Divulje barracks for several years and had a well established routine for the care of the sick. The AECO (Aeromedical Evacuation Co-ordinating Officer) a Wing Commander had provided a primary care service for some time. There were four in-patient beds, administered by the aeromed staff of whom there were six.

It was clear from the outset that the MST and the aeromed flight were going to have to share many facilities such as office space as well as there being an overlap in clinical responsibility. It was therefore decided to integrate the two facilities to form one medical centre occupying the whole ground floor of the building. The MST assumed responsibility for primary care and in patient care. The aeromed patients were admitted to the MST and their treatment administered by the MST. The AECO had admitting rights to the MST in the style of a GP hospital. This was a highly successful integration resulting in a totally purple organisation. The aeromed flight retained responsibility for all aeromed matters



Key

1	CPO CHT Office	5	Lobby Triage	9	Hardon Ward (HDU/ITU)	3	SN Desk
2	Attended Office	6	Operating Theatre	10	Cheshire Ward(Low dep)	4	RSME Desk
	Patient Shower	7	Consulting Room	11	Laboratory	15	Clerk Desk
4	Female Toilet	8	Reception	12	X Ray	6	Particulars
						7	Toilets & Basins

Figure 1

Whenever necessary MST staff assisted them in their task providing specialist staff for in theatre casevac or ground transfers and providing specialist support The aeromed staff happily turned to when required to help with the in patients retaining responsibility for the administration of sick parades on a daily basis

There was a Dental Officer located permanently in Divulje Barracks His surgery was located in the same building as the MST He saw patients from the MST for dental and facio maxillary consultation and had admitting rights to the MST

STAFF TRAINING

It was felt important with a new team that some training should be undertaken There was a wide variety of levels of previous experience Some of the Combat Medicine Technicians (CMTs) in particular were well trained but had little recent hands on experience The Naval MAs had all come from theatre jobs and were very experienced in such skills as cannulation and intubation doing them on a daily basis

A daily training programme was designed and instituted to train all of the staff medical and non medical in clinical skills The framework of the main part of the training serials was the Advanced Trauma Life Support (ATLS) course the OC being an ATLS instructor Other non medical serials were included to broaden the training level of all of the staff One of the principal intentions was to ensure that all members of staff were cross skilled The major lack of experience among the nursing staff was Intensive Care experience Only one of the nurses the theatre sister (PONN) had any ITU experience ITU serials were included and much on job experience was obtained with real ITU patients

PERSONNEL

The team comprised three main elements — the field surgical team (FST) the in patient element and the support element There was a conscious effort to avoid keeping these three elements separate and wherever possible job swaps were arranged

The FST comprised

1 surgeon (OC) — Surgeon Commander RN
1 anaesthetist — Surgeon Lieutenant Commander RN
1 resuscitation officer — Surgeon Lieutenant RN
1 theatre sister — Petty Officer Naval Nurse
2 Operating Department Assistants/Theatre Technician — Leading Medical Assistant RN Medical Assistant RN
1 Floor runner — CMT RAMC

The in-patient element comprised

1 senior nursing officer (matron) — Captain QARANC
1 nursing officer — Captain QARANC
2 RGN — Sergeant RAF Private QARANC
4 CMT — Sergeant RAMC Corporal RAMC 2 Private RAMC

The support element comprised

1 Staff Sergeant (SNCO) — Staff Sergeant RAMC
1 Laboratory technician — Staff Sergeant RAMC
1 X ray technician — Sergeant RAMC
1 Medical/Dental technician — Sergeant REME
1 Environmental Health Technician — Sergeant RAMC
1 Medical stores clerk — Lance Corporal RAMC
1 Electrician — Lance Corporal RE
1 Clerk — Corporal AGC (ex RAMC)
1 Driver — Private RLC

ORGANISATION FOR ACTION

The staff were allocated to run a peace time organisation There was however a need to have a plan for action or mass casualty reception An operational plan was assembled using the combined strengths of the MST and aeromed flight A mass casualty exercise was planned but by pure chance a real mass casualty situation arose on the same day making the exercise redundant The plan was found to be sound and worked without problem

GERMAN/FRENCH FIELD HOSPITAL

It had long been planned to establish a combined German/French field hospital The original intention was that they would build a 150 bed field hospital at Tregir 5kms west of Divulje Barracks

After studying the potential site it was felt that this number of beds would not be possible and this was reduced to 60 beds The plan was that this hospital would take all of the sick and injured within the FRY In addition to this in patient facility there was to be a French aeromed unit of 10 beds which could expand to 30 beds

Plans were put into place to deploy the unit very quickly with the original intention of being operational by 1 August It was clear that this opening date was over optimistic MST3 was already functioning well by this time and was operating at near full capacity As time progressed it became apparent that there were some significant problems with the field hospital's development The completion date moved right quite quickly They were not able to take any patients until 15 August and then only very few

The staffing levels were generous as originally planned The total staff for the 60 beds was 600 The standard of care that could be provided was very high There were four general surgeons and every other significant surgical and medical speciality was represented The support services were of the standard one might expect in a district general hospital The only omission which is likely to be corrected was a CT scanner The whole system came on line gradually such that they were able to open fully by 1 September

Any new system needs time to find its feet As the majority of the patients within the area were either British or being cared for by the British in MST3 it was felt appropriate to allow a period of overlap It was therefore decided to close MST3 on 15 September and pass over all the responsibility for in-patient care to the GE/FR hospital During this phase of transition medical staff benefited greatly by working alongside colleagues from the German hospital both in MST3 and at the German Hospital

AEROMED PATIENTS

The MST and aeromed flight functioned as a single unit Consequently a number of patients were admitted to the MST as transfers for aeromed A significant number of these required further treatment or surgery during their stay in the MST During MST3's deployment 99 patients were admitted for aeromed purposes many of whom had been unfit for deployment in the first place The deployment of the Rapid Reaction Force contributed a significant number which appeared to be increasing dramatically during the month of September

Consequent upon the wind down or closure of other Service hospitals in the UK RNH Haslar and BMH Catterick were the only Service hospitals able to receive aeromed and MST patients being evacuated who required long term care There would have been considerable advantage in having easier access to the RN Hospital Unit at Derriford Plymouth especially for South West based patients such as those from the Devon and Dorset Regiment which provided the resident battalion during MST3's deployment

CLOSURE OF MST

By the middle of September the German Field Hospital was fully functional and receiving patients for surgery and in-patient treatments It had originally been planned to close MST3 on 15 September 1995 Fate intervened when the surgeon from MST1 became ill and required to be relieved from 13 September MST3's surgeon

Table 1 First Consultations Only hospitalised and non hospitalised patient

	UN Military	*UNHCR UNICEF NCO s UNCIVPOS UN International & Local UN Civilian & Contractors*	*Local Population Displaced Persons refugees*
Respiratory infections including ears	116	4	0
Respiratory non infectious	37	5	0
Gastro intestinal infections	42	4	0
Gastro intestinal non infectious	48	0	0
Musculoskeletal	254	2	0
Neurological	22	1	0
Metabolic/Nutritional	5	0	0
Circulatory illness	9	1	0
Notifiable diseases	1	0	0
Skin infections	59	3	0
Dermatology non infectious	103	3	0
Eye infections	44	1	0
STD	17	0	0
Urological conditions non STD	17	2	0
Psych atric/psychological disorders	7	0	0
Drug/alcohol abuse/intoxications	2	0	0
Gynaecology/Obstetrics	8	1	0
Climatic injury	6	0	0
Bites stings and parasitic conditions	43	2	0
Symptoms/ill defined conditions	28	3	2
Injury	316	4	2
Sum	1182	36	4

	UN military	*UNHCR*	*Civilians*
1st Consultations	863	51	3
Follow ups	273	25	2

Activities	*UN Military*	*UNHCR UNICEF NCO s UNCIVPOS UN International & Local UN Civilian & Contractors*	*Local Population Displaced Persons, refugees*
1st Consultations	863	51	3
Follow Ups	273	25	2
Vaccinations	3	1	0
Pat Admit to Sick bay/Hospital	183	0	0
Surgical ops general anaesthesia	23	0	0
Surgical ops local anaesthesia	21	0	0
Pat referred to higher UN level of care	45	0	0
Pat referred to civilian hospitals	4	0	2
Medical Evacuations Air	3	0	99
Medical Evacuations Ground	4	0	0
Medical repatriations	154	0	0
Deaths	0	0	0

and anaesthetist were deployed to MST3 in Zepce Northern Bosnia to cover this deficiency closing MST3 to surgical admissions from that date The MST closed to all in-patients on 16 September 1995, after releasing the aeromed patients Remaining in patients were transferred to the GE/FR hospital

CLINICAL

Primary care arrangements

Before the arrival of MST3 all of the primary care had been undertaken by the AECO MST3's resuscitation officer was tasked to provide primary care within the combined facility on Divulje Barracks Because of its location the medical centre attracted a large number of patients from all national elements within the camp and its surroundings Sick parades could be very large with up to 40 patients seen per day

Any patients of a surgical or traumatic nature were referred to the surgeon for surgical opinion Patients for admission or investigation were passed over to the ward area or treatment room for further treatment as administered by the nursing element or the theatre element Night cover was shared between the resuscitation officer and the AECO on an on call basis Nocturnal calls at any hour were the norm rather than the exception Duty medic cover was provided by the aeromed flight during the day and by the ward CMT/RGN at night

Statistics

During the period 9 July to 26 September a total of over 1000 patients were seen A wide variety of conditions were encountered ranging from simple headaches to open tuberculosis and multiple trauma A full breakdown of diagnoses is shown as *Table 1*

In patients

Patients requiring in patient care were admitted to one of two wards (*Figure 1*) Cheshire ward was used principally for low dependency patients and Harden ward for ITU pre and post operative cases and the more severely ill As far as possible peacetime hospital standards of care were provided Ward rounds were conducted daily by the OC or a nominated deputy in conjunction with the senior nurse on watch All of the patients were admitted under the care of OC MST3 The anaesthetist was responsible for the day to day management of the in patients and their documentation The senior nursing officer was responsible for the provision of nursing care for all in patients

In Patient Statistics

Patients from many nations and services were treated as in patients Croatia Denmark Egypt Jamaica Keyna Malaysia Nepal Netherlands New Zealand Norway Pakistan Russia Serbia Spain Sweden Turkey UK Ukraine UN Civilian The overall statistics are shown in *Tables 2 3* and *4*

Table 2 Overall statistics

Total number of admissions	254
Total number of bed days	881
Mean length of stay	3 5 days
Mode length of stay	2 (103)
Range of stay	1 17

Table 3

Admitted for aeromed	99
Aeromed after treatment	22
Total aeromed	121
Total discharged to duty	120
Total transferred to other medical facility	13

SURGICAL FACILITY

Location

A room with air conditioning within the MST3 building was selected to act as the operating theatre Dimensions were 19 × 19 which was a more than adequate amount of space for the function In view of the summer temperatures the air conditioning was felt essential in contributing to a tolerable working environment

Set up

Field surgical equipment was used for operating The operating table (MeVicar) was very basic with a deficiency of attachments later provided by local Engineers It was only suitable for operating on supine patients and required manual tilting Lighting was provided by two Daray lamps but a moveable surgical lamp would have been preferred Turn around time in the Portaclave steriliser was 30 minutes

Anaesthetic equipment was basic and consisted of the tri service apparatus with isoflurane a Cape TC 50 ventilator and a Propaq monitor Blood gas analysis was not available Oxygen was available in size E cylinders or from a Pneupac Oxygen concentrator (which can provide up to five litres of oxygen per minute)

Table 4 In patient diagnostic categories

Diagnostic category	*Number*
Back pain	35
Ankle injury	21
Upper limb injury	16
Psychiatric/psychological	16
Elective surgery	13
Knee injury	12
Skin infections	11
Knee pain	10
Hand injury	9
Acute abdomen	9
Urology	9
Head injury	8
Symptoms and ill defined conditions	8
Gastro intestinal non infection	7
Abdominal pain	7
Acute medicine/Tropical medicine	7
Battle injury	6
Back injury	5
Upper limb pain	5
URTI	5
Respiratory non infectious	5
Ophthalmic	5
RTI	4
Gastrointestinal infections	4
Rheumatology	4
Ankle pain	2
Hand pain	2
Chest injury	2
Abdominal/perineal injury	2
Dermatology non infectious	2
Climatic injury	2
Bites stings and parasitic conditions	2
Dental	2
Chest pain musculoskeletal	1
Neck injury	1
Facial injury	1
Nasal injury	1
STD	1
Obstetrics and gynaecology	1

Two Ohmeda 9000 syringe pump drivers were available for TIVA and sedation. An obvious problem was the deficiency of paediatric equipment.

Procedures

The first operation was carried out on 11 July 1995 and the last on 13 September 1995. There were 23 general anaesthetics and 21 local anaesthetics for a wide range of conditions. The distribution of types of surgery is shown in Figure 2.

Figure 2

The surgical set up was such that it was possible to do both elective and emergency procedures. Indeed it was felt to be essential to perform elective surgery to maintain the operating capability at a high level. Although not a sterile environment in the classical hospital sense it was a suitable environment to undertake surgery. The surgical team operated in combat clothing with beret as headgear wearing disposable gowns. Although infection control advisers may throw up their hands in horror no cases of wound infection occurred in over 60 surgical incisions.

Anaesthesia

Anaesthetic techniques were broadly divided into emergency and elective techniques. Elective cases were anaesthetized with a TIVA technique using Propofol and Alfentanyl with a laryngeal mask where appropriate. Emergency cases underwent a rapid sequence induction with Thiopentone Suxamethonium and maintenance with Isoflurane in an air/oxygen mixture (IPPV) and intermittent Vecuronium and opioids. One axillary plexus block was performed. Post operative analgesia was achieved through a combination of wound local anaesthesia morphine infusions or intramuscular (prn) and simple analgesics (NSAIDS paracetamol).

ITU cases

There were four ventilated cases requiring full intensive care. Three of these were battle casualties and the fourth primary respiratory and renal failure from Hanta virus infection. The scale of stores for the ITU beds was found to be good with few significant deficiencies. The one major deficiency was the inability to monitor blood gases. This must be considered an

essential part of intensive care. Ventilated patients cannot be safely monitored on oxygen saturation alone or for any length of time. The type of trauma encountered in both peace and war make ITU a significant part of any medical facility. Blast lung is a common battle injury that will always require access to blood gas analysis. One was ordered as a priority demand but took four weeks to arrive.

X ray Patients

The X-ray facility was very heavily used. Over 200 patients from all of the national elements required X ray in theatre. This was the only military X ray facility in Croatia. The facility was housed in the end room of the MST building. This site was chosen for reasons of radiation safety. The majority of the investigations were for limb trauma. A number of chest and trunk X rays were performed. Contrast radiography was confined to intravenous urography. The contrast media were administered by one of the medical officers. No complications were encountered.

Laboratory patients

The initial laboratory kit was rapidly shown to be insufficient for the need in the Split region. The MST functioned as a base and evacuation hospital and attracted simple and complex cases from the whole area of operations. There was a clear need to upgrade the facility to that of a small town hospital.

There was a significant need for bacteriological investigation. It was possible to do simple Gram staining. Malaria and other parasitic infestations were commonly encountered with the variety of UN soldiers. Blood smears for parasites were performed on a regular basis. The final interpretation of these films was done by one of the medical officers who was experienced in these matters.

Psychiatric patients

A Community Psychiatric Nurse (CPN) deployed with MST3. He was based in Divulje Barracks in Split and his area of responsibility was Southern Croatia and the bases on Tomislavgrad and Lipa in Bosnia. The CPN travelled round all the units for which he was responsible on a weekly basis. He assessed soldiers when requested to do so and made commanders and medical personnel aware of the services available. The aim was to provide a proactive service for serving British personnel in the FRY, to provide in theatre support to those capable of handling difficult situations and to remove those from theatre who were a potential danger to themselves or others.

Environmental Health

The Environmental Health Technician (EHT) was an essential asset to have with the MST. He covered a wide area including the Split region, the Dalmation coast of Croatia and the rear area of Bosnia as far as Tomislavgrad. He provided valuable advice to local units and the command and was able to render some very inhospitable locations habitable. Other tasks undertaken by the EHT were investigation of industrial accidents, follow-up visits to ensure that all of the advised changes had been undertaken, advice to the MST on EH matters and the disposal of hazardous and bio-hazardous materials.

SPECIAL PATIENTS

The vast majority of in and out patients were of a relatively minor nature. Four patients stand out in particular for their medical interest and serious nature of their conditions. Brief medical reports are written here describing their conditions. They also serve to demonstrate the international flavour of MST3's role.

Patient 1

Patient 1 was a 19 year old British soldier. He presented to his medical centre with a four-day history of general malaise with nausea and abdominal pain. He developed a cough with respiratory difficulty for which he was admitted to MST2 at Gornji Vakuf. On admission he was pyrexial with a marked tachypnoea. An initial chest X ray demonstrated bilateral hilar shadowing suggestive of an atypical pneumonia. Urine testing showed a trace of chemical haematuria. By pure chance the AECO and MST3 surgeon were on a flying visit to MST2 as the patient was admitted. The aircraft was immediately re roled to take him to MST3 Split as an internal casevac.

Shortly after arrival in MST3 his respiratory condition worsened considerably and he required to be mechanically ventilated. He was noted to have a markedly rising plasma urea (> 300) and became oliguric. He remained in the ITU facility in MST3 for a period of less than 24 hours during which time it was possible to maintain his vital functions. The initial working diagnosis were Legionella and Mycoplasma pneumonia for which he was treated with appropriate antibiotics.

In view of his two system failure with renal and pulmonary failure it was decided to transfer him the next day to UK As there were no ITU beds available in the UK military system that day RAF High Wycombe negotiated an ITU bed in Guy s Hospital London During his stay in Guy s ITU he required further ventilatory and renal support but made a gradual and complete recovery Serological assays showed the cause of his infection to be Hanta virus

Hanta virus infection had not been widely recognised as being a problem in this area Further investigation at a higher level revealed that there had been three cases among Swedish soldiers and an undisclosed number of fatalities in the Bosnian army Hanta virus is an haemorrhagic fever acquired from the urine of infected rodents and occurs sporadically

Patient 2

Patient 2 was a 23 year old soldier from another national contingent who was injured in a mortar explosion in Sarajevo when an observation post was directly targeted There were six casualties in that incident All were taken immediately to the French FST in Sarajevo where two underwent resuscitative surgery Patient 2 had received multiple fragment wounds to the liver the right chest the right upper arm and lower limbs On initial admission to the French FST he was bleeding profusely from the right hepatic artery He underwent heroic surgery where the bleeding was arrested An external fixator was applied to the compound fracture of the right upper humerus He was transferred two hours post operatively to MST3 ventilated A second patient (Patient 3 below) was transferred at the same time

On arrival Patient 2 was stable with a reasonable haemoglobin and ventilatory parameters His pulse oximetry and blood chemistry were satisfactory but we were unable to measure his blood gases Patient 3 was undergoing emergency surgery so Patient 2 was kept in the ITU overnight He remained stable At 0600 he developed a right pneumothorax for which he had an intercostal drain

The same morning he underwent excision of his numerous fragment wounds The abdomen remained stable and therefore no further laparotomy was required To ease pressure on the ITU beds he was transferred to the newly opened German Field Hospital later that same day

On the sixth post-operative day he developed peritonitis An ultrasound examination had suggested a perforation of the gall bladder that was managed conservatively at first With the advent of peritonitis it became clear that this management had been unsuccessful He underwent re laparotomy and insertion of drains at the German Hospital On the eighth day he developed further evidence of peritonitis and was taken back to theatre as an emergency Our German colleagues were aware that the OC MST3 s surgical speciality is hepato biliary and he was called to assist in the surgery At operation he was found to have a laceration of segment V and VI of the liver through the gall bladder bed There was a persistent bile leak To decompress this leak a choledochotomy was performed and a T-tube inserted This drained freely and was successful in allowing the bile leak to close He was transferred to Germany the following day for further treatment at Ulm Military Hospital and is said to be doing well

Patient 3

Patient 3 arrived at the same time as Patient 2 having been injured in the same incident He had sustained numerous fragment injuries to the chest abdomen perineum upper limbs and lower limbs His limb wounds had been explored and closed over drains His right testicle had been amputated by blast This wound had been debrided and primarily closed There was a suspicion of blast lung as he had a perforated right tympanic membrane

On arrival it was clear that he had peritonitis He was therefore taken to theatre immediately A chest drain was inserted prior to anaesthesia as there was a penetrating chest injury of the right hemi thorax 300mls of haemoserous fluid were drained Laparotomy revealed a through and through perforation of the dome of the bladder and a perforation of the terminal ileum The bladder perforations were primarily closed a urinary catheter inserted and the ileum resected Numerous contaminated fragment wounds of the limbs were excised and left open As with Patient 2 extensive excision was required The left arm wound had caused a comminuted compound contaminated fracture of the distal radius This required an extensive fasciotomy and debridement The ulna was intact

Patient 3 was transferred to the German Hospital after a stay of 36 hours He was ready for extubation after transfer having developed no evidence of blast lung The OC MST3 assisted in the delayed primary closure and grafting of

his wounds He was subsequently transferred to East Grinstead hospital at the request of his government for further treatment of his distal radial fracture

Patient 4

Patient 4 from a third national contingent, was by far the most seriously ill patient encountered during MST3 s deployment He was injured by close range fragments during the Croatian assault on Knin He received two high-energy fragment injuries one to the right loin and the other to the left buttock He was initially taken to the local civilian hospital where he was noted to be profoundly shocked After a six hour delay he received a blood transfusion that raised his haemoglobin to 8g/dl The following day he was transferred to the Czech FST where he had a laparotomy He was found to have n perforatinn of the colon at the recto sigmoid jnnction The left colon was mobilised and a loop colostomy was fashioned The colonic perforation was oversewn The right loin wound was explored the fragment removed and the wound closed over a drain

He was transferred to MST3 some three days following injury On arrival he was in established septicaemic shock There was clinical evidence of peritonitis His haemoglobin was 10 and his platelet count 13 This subsequently fell to 7 per operatively He was taken to theatre for laparotomy while efforts were made to locate some platelets Haemostasis was a huge problem during the operation The colostomy was non functional and was revised There was a perforation of the terminal ileum which was resected with primary anastomosis Attempted mobilisation of the duodenum and pancreas to assess the penetrating loin wound resulted in unacceptable haemorrhage and had to be abandoned The buttock wound was formally excised resulting in a loss of a considerable amount of contaminated tissue The fragment had passed through the anal canal and up through the pelvis beside the rectum perforating the colon at the recto-sigmoid junction

Lack of bacteriology and haematological support was a severe constraint Sepsis was proving to be his major problem with the likelihood of disseminated intravascular coagulopathy (DIC) being high It was decided to transfer him to a higher level medical facility He was therefore transferred to the American MASH at Zagreb by the aeromed flight with MST3 s anaesthetist in attendance as he required ventilatory support

We heard from the MASH that he underwent surgery the following day By that time he had established necrotising fasciitis arising from the loin wound This was widely excised but he remained in established septicaemia After an in-depth conversation between MST3 s surgeon and the American surgeon it was decided that no further surgery should be offered as it was apparent that he would require a hind quarter amputation and hemipelvectomy with a limited chance of survival He died shortly afterwards

CONCLUSIONS AND RECOMMENDATIONS

Overall this deployment can be regarded as successful There was a need for medical and surgical support in the Split region this was provided and in much larger numbers than originally expected

The tri service staffing was a success There was no inter service rivalry other than jolly banter Personnel from all services benefited from a close working (and living) relationship with colleagues from other services For these items of dwindling numbers it is the way ahead.

All members of staff at all levels have gained from the experience and have learned a considerable amount

Patients of many nations have benefited from the care provided by MST3 The international nature of UN service has proved to be a professional and cultural learning experience

J roy nav med Serv 1995 81 202

Submarine general duties: The makings of a better doctor?

B C C Tamayo

To do no harm is a doctor's first directive Those were the words that went through my mind when presented with my first serious medical problem ou my first Polaris SSBN Patrol and as luck would have it ouly six hours into oar Ready SSBN status This medical problem was a testicular torsion not serious by uormal hospital standards but a serious problem to a 'bomber ou patrol whuse prime aim is to stay at sea undetected

SSBNs break Patrol only ander the most extreme circumstauce with authority having to come from the highest level The patient was certainly not about to die and if it was absolutely necessary to easevac him theu it would still be some days to sail out of the patrol area aud send a signal For a torsiou this timescale is of course of no use At my old medieal school a senior general surgeou ex RNVR once told me that there is no such thing as minor sargery only muior surgeons With this in mind I had to make my decisiou do I attempt surgery with all its inherent risks? Could I eope with a wound problem or au infection for the next nine weeks if everything weut horribly wrou? After some degree of soul searchuig...aud after reading all my textbooks at least twice I still had to say that in good faith I believed the patieut had a torsiou aud that sargery was required I briefed my Captain who gave his permissiou

Surgery on a bomber is not easy Even though we have more thau enough kit it is all in different stowages all over the boat aud takes time to assemble My POMA and LMA set up the Senior Rates Annex (dining area) as the theatre the MEO asked if we could sell tickets for the Welfare Fuud and I thoroughly discussed the procedure with the man For anaesthesia I used IV Midazolam and morphine with local anaesthetic to the spermatic cord at the external inguinal ring and to the scrotal skin IV prophylactic antibiotics were giveu As for the surgical technique straight from the book uothing fancy The end result the man was back within his watch within five days and the scar fully healed by week four No one was more relieved than I! After that with my street cred somewhat enhanced I got many other requests for surgery for everything from removal of moles to vasectomies! Not surprisingly I refused

What did I learn from all this? That as a doctor you sometimes have to make hard decisions...but if after suitable consideration you feel in good faith that you need to do something, then do it Do no harm but if possible do some good and if it all goes wrong then live with it No one said doctoring was going to be easy I am glad I volunteered for submarines and I would thoroughly recommend the sileut service to any doctor It teaches you how to make decisions on your own without any possible help from a senior and teaches you how to stand and fight your own corner especially important in the harsh world of submarines It makes you think much more clearly remembering that you may have to justify your decisions later to the Captain It makes your prescribing more careful — give a man a NSAID and if he bleeds you cope with it for the rest of Patrol It teaches responsibility leaps and bounds above any hospital job and I believe responsibility above that of most Surface Fleet jobs as well with the added enormous responsibility of nuclear reactor and weapons radiation safety Indeed the Commaud look to you as the expert in so many fields from medicine itself to health and safety to food hygiene This together with the camaraderie of your fellow officers is to me what the Navy is all about and why I joined Once trained and having earned your Dolphins you will be treated as an equal by your fellow Submarine Officers not just as the doctor So to all those coming up to start general duties consider submarines not an easy job with difficult training but one which could in fact make you a better doctor

Surgeon Lieutenant Tamayo is currently appointed to HMS *Repulse*

J roy nav med Serv 1995 81 203 206

Clinical management

Thrombophilia: Some recent advances in understanding

C M James

Abstract

Thrombophilia is a term with many definitions although the majority include criteria such as thrombosis under the age of 45 recurrent thrombo-embolism and a positive family history It reflects a disturbance in the normal delicate balance between pro and anti coagulation such as to favour inappropriate thrombosis This review concentrates on the newly described phenomenon of activated protein C resistance while reviewing the natural anticoagulant system It will also briefly examine the indications for thrombophilia screening and the implications for individuals found to have an abnormality of their natural anticoagulants

PREAMBLE

This article was written to form part of the inaugural electronic journal clinb held in the UK Professional forum of the CompuServe (CIS) electronic conferencing system CIS is a commercial system that provides general and special interest forums which can be accessed by those with a modem and appropriate software Although it has links into the Internet it is fundamentally a stand alone system It charges a subscription and other variable on-line charges Recently a UK professional forum has been established (GO UKPROF) and this includes a public area for health care and a private area for medical dental and nursing members The forum is increasingly active and has members from a wide range of specialities and includes GPs consultants and those in training There is always active and sometimes heated debate on contemporary issues and there is a steady trend towards its use as a support and educational forum The author was invited to submit two presentations for the inaugural journal clinb The submission was read by at least 60 doctors and about 15 joined in an active debate over some of the issues It is hoped that the journal club will become a regular monthly feature that may attract CME points The author knows of only one other contributor from the Defence Medical Services and would encourage anyone who is interested in the opportunities and challenges of a new medium to take out a trial subscription

THE NATURAL ANTICOAGULANTS

Until recently most attention in haemostasis was directed towards the pro-coagulant cascade immortalised in numerous lectures as comprising the intrinsic extrinsic and common pathways This simplistic approach remains useful for understanding the implications of abnormal clotting tests but the reality is far more complex. It has become clear that like the complement cascade the pro coagulant cascade is continually becoming activated and that there is an element of auto activation and amplification in the early stages To counteract this pro-coagulant tendency there are three known main naturally occurring anticoagulant proteins Deficiency of one of these proteins antithrombin (AT) protein C (PC) and protein S (PS) may be found in up to 20% of adults under the age of 45 with a history of venous thrombo embolism

ANTITHROMBIN

Antithrombin or AT (previously known as Antithrombin III) is a Serpin (Serine Protease Inhibitor) which deactivates Factors IIa and Xa Factor X is activated by both intrinsic and extrinsic pathways and is at the start of the common pathway Factor Xa activates Prothrombin (Factor II) to Thrombin (IIa) initiating fibrin production AT is well placed to counteract the pro coagulant tendency Exogenous heparin as well as naturally occurring heparinoids accelerates the action of AT by a

At the time of writing Surgeon Commander James was the Consultant Haematologist at RNH Haslar

factor of 2 300 AT deficiency is well described and recent studies suggest that it accounts for between 5% of 393 adults[1] and 2 8% of 660 adults[2] with acute venous thrombo embolism

PROTEINS C & S

Proteins C and S are both Vitamin K dependent natural anticoagulants Protein C is activated by thrombin in conjunction with a protein thrombomudulin found on endothelial cells Activated Protein C (APC) then inactivates Factors Va and VIIIa Factor V is a cofactor in the activation of Prothrombin by Factor Xa, Factor VIII is a cofactor in the activation of Factor X by Factor IXa Protein C requires its own cofactor Protein S for full activity Protein C deficiency has a reported incidence in adults with acute venous thrombo-embolism of between 9 2% and 2 5% (Protein S deficiency has a reported incidence of between 7 6%[1] and 1 3%)

ACTIVATED PROTEIN C RESISTANCE

As 80% of those investigated for thrombophilia have no demonstrable anticoagulant deficiency there has been a continuing search for other factors Increased levels of plasminogen activator inhibitor t (PAI 1) may lead to diminished fibrinolysis and consequent thrombotic tendency but this accounts for at most a further 3% of cases Acquired causes such as the Lupus Anticoagulant which despite its name is prothrombotic in vivo accounts for some further cases

In mid 1993 Dahlback[3] reported a new finding of a poor response to APC in families with a history of thrombosis In December 1993 a paper published in the Lancet[4] reported a population based case-control study of this observation This study detected 64 (21%) cases of APC resistance in 301 unselected consecutive patients with venous thrombo embolism The frequency of this abnormality in a case-controlled normal population was 5% Two main conclusions were drawn First that there is a seven fold increase in risk of DVT in those with APC resistance second that the high prevalence suggests that screening would be worthwhile At this time the inherited absence of another FC cofactor was thought to be the cause

Dahlback's findings were confirmed by other studies and by June 1994 Dahlback[5] was able to publish evidence that APC resistance was actually due to abnormal Factor V rather than a cofactor deficiency The mutation was identified as a single point change of arginine 506 to glutamine[6] allowing Factor V to retain procoagulant activity but be resistant to proteolytic destruction by APC

Further studies suggest that the incidence of APC resistance may approach 33% in thrombosis patients and 5% in controls It represents a strong risk factor for venous thrombo embolism and is the most prevalent known hereditary abnormality of the natural anticoagulant pathway

Over the last 18 months there has been a predictable flurry of letters and reports on the subject The rapid availability of a screening test for APC resistance has encouraged its introduction into routine thrombophilia screening however as is so often the case the ability to detect an abnormality is in advance of an understanding of its implications

As the prevalence of the heterozygous state may be about 5% of the population there will be a relatively high incidence of the homozygous state this is estimated at 1 in 5000 [7] In contrast to the severe and often fatal implications of the homozygous deficiency of protein C or S Zoller[8] showed that 10 of 16 (60%) homozygotes were asymptomatic at the age of 33 By implication as well as by the observation that not all of the 5% of the population with APC resistance develop thrombosis it seems that the finding of APC resistance is not necessarily a predictor of problems However there are growing suggestions that APC resistance may underlie a variety of other conditions

Holm[9] reported two unrelated young (33 and 34 yr) women who suffered myocardial infarction and who were homozygous for APC resistance One patient had a strong family history of MI (eight of 29 adults) and two of those were found to be heterozygotes for APC resistance

There are contradictory reports of the role of APC resistance in arterial thrombosis Halbmeier[10] reported that six of 30 cases of thrombotic CVA had APC-resistance however Cushman[11] could not confirm these findings

A potentially important paper by Vandenbroucke and his fellow workers in Leiden compared 155 pre menopausal women who had developed a deep vein thrombosis with 169 controls The risk of thrombosis amongst users of oral contraceptives was increased four fold The risk of thrombosis amongst those with APC resistance was increased eight-fold The risk for OCP users who were also APC resistant was increased 30 fold The risk for the

combined OCP/APC resistant group amounts to 27 7 per 10 000 women years They conclude that if a woman who develops thrombosis is found to be APC resistant then this should be taken into account when advising on future contraceptives but do not consider that the low risk justifies excluding 4–5% of women from OCP usage The observation that the risk of combined OCP/APC resistant women is higher than the individual component risks might be explained by preliminary results suggesting an increase in APC resistance in women taking the OCP but who were negative for the Factor V mutation This finding suggests that APC resistance may be related to more than an abnormal interaction between APC and Factor V Leiden — further work will be needed

PRACTICAL IMPLICATIONS

How should the emerging importance of APC resistance alter our practice?

The current consensual recommendations for thrombophilia screening [3] continue to be valid namely

Venous thrombo embolism before the age of 40-45 years
Recurrent venous thrombosis or thrombophlebitis
Thrombosis in in aaasual site
Unexplained neonatal thrombosis
Skin necrosis — especially if on coumarins
Arterial thrombosis before the age of 30
Relatives of patients with proven thrombophilic abnormality
Patients with a clear family history of venous thrombosis

Most laboratories will have added a screen for APC resistance to existing screening for PC PS AT and Lupus Anticoagulant Many will also screen for abnormalities of PAI 1 and/or other markers of abnormal fibrinolysis

There remains the practical management problem of what to do with patients who are found to have an abnormality in their natural anticoagulant system Those who have had a thrombo embolic event should probably be offered life long anticoagulation although this needs to be an individual decision and will depend on circumstances For instance a woman with protein C deficiency and a single pregnancy associated DVT does not necessarily need long term anticoagulation Those asymptomatic family members with heterozygous deficiency do not need routine anticoagulation although high risk situations should be covered by prophylaxis One of the few prospective studies of asymptomatic PC and PS deficient patients [4] looked at 44 patients against 49 controls During the study (118 patient years for PC 92 8 for PS) there were eight thrombotic events in six deficient patients The incidence was 2 5% per patient year for PC and 3 5% per patient year for PS A further study [5] demonstrated that 50% of 77 heterozygotes for protein C uncovered during family studies had had at least one thrombotic event by the age of 45 years Finally Pabinger [4] determined that for patients with acute thrombo-embolism and PC PS or AT deficiency the mean age of thrombosis was 26 8 years compared to those with thrombosis but no deficiency of 39 years They also noted that the first thrombotic event for those with deficiency had occurred before the age of 45 in all cases

CONCLUSIONS

The discovery of Factor V Leiden and the thrombophilic tendency of those with APC resistance has extended our understanding of thrombophilia It has also provided information on the APC/Factor V interaction as well as posing more questions such as the possible presence of another co factor and on the role of activated Factor V in self destruction through activating protein C

APC resistance is the most common abnormality of the natural anticoagulant system and it may turn out to be a predictor for phenomena such as OCP associated thrombosis arterial disease and myocardial infarction In common with PC PS and AT deficiency the possession of APC resistance does increase the risk of thrombo-embolic disease particularly in the young More possession of a defect does not predict inevitable thrombosis and does not mandate anticoagulation but it does imply the need for prophylaxis at times of risk and would suggest the need for long-term anticoagulation in those who have suffered a thrombo embolic event.

Screening asymptomatic individuals who are not in known risk families is not cost effective Even for women with APC resistance and taking the OCP the risk of thrombosis is small

One lesson that is clear is that medical staff should be assiduous in seeking a family history of thrombo embolic disease and If positive meticulous in providing prophylaxis to cover high risk events

The Armed Services employ those in exactly the age range (18-40) where the risk of

thrombo embolic disease due to a thrombophilia tendency is at its height It is not possible to employ service personnel on active duty whilst on Warfarin and in my experience about three to four Royal Naval personnel are invalided each year for thrombo-embolic disease The increased understanding of the risks of thrombophilia would allow screening of prospective candidates who have a suggestive family history and a policy may be needed to assess the fitness to serve of those with proven natural anticoagulant deficiency

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HMS Newfoundland Association 1942-1959 — 8th Annual Reunion

HMS *Newfoundland* a Colony Class cruiser served with distinction during the Suez Crisis of 1956 particularly in the Red Sea

To commemorate the 40th Anniversary of this and to acknowledge the exploits of the ship in the Mediterranean and the Pacific Ocean during World War II and later in the Far East the HMS Newfoundland Association 1942 1959 is holding its 8th Annual Reunion in Babbacombe Bay Torquay Devon from 12 to 14 April 1996

Details of the Association and the Reunion can be obtained from

Tom Roxby
8 Lindale Close Bughawton Congleton Cheshire CW12 2DG
Telephone 01260 279819

J roy nav med Serv 1995 81 207 209

Case history

Non-union of ankle fractures in patients with ipsilateral foot drop

G E D Howell and P E L Evans

Abstract

We report two cases of non union of closed ankle fractures in patients with neurologically compromised ipsilateral lower limbs which we believe to be the first description of this association in the English language

CASE REPORT ONE

A 64 year old woman sustained a trimalleolar fracture of her left ankle (*Figure 1*) as a result of a fall

Three years earlier she had undergone excision of a meningioma from her right parietal region She was left with a permanent left sided L5/S1 sensory deficit and foot drop

The ankle injury was treated with a below knee non weight bearing cast for four weeks and then weight bearing for two weeks The patient subsequently resumed the use of her foot drop splint

At three months the ankle was painful and swollen Radiographic examination showed a displaced non union of both the medial and lateral malleoli (*Figure 2*)

The patient underwent a left ankle arthrodesis

CASE REPORT TWO

A 43 year old woman sustained a bimalleolar fracture of her left ankle as a result of a minor fall (*Figure 3*) Four years earlier the patient had been involved in a severe road traffic accident in which she sustained multiple injuries including damage to her proximal left sciatic nerve resulting in a permanent foot drop

The ankle fracture was treated by manipulation under general anaesthetic and immobilisation in a below knee non weight bearing cast for three weeks and then partial weight-bearing for a further three weeks The cast was then removed and full mobilisation commenced with the aid of her foot drop splint

At five months the ankle was swollen painful with a valgus deformity Radiographic examination demonstrated mal union and a disorganised ankle joint (*Figure 4*)

The patient subsequently underwent ankle fusion

DISCUSSION

Neurological damage may result in altered proprioception and muscle imbalance at distal joints Sciatic nerve damage produces foot drop abnormal gait and loss of proprioception at the ankle joint

Ankle fractures are usually sufficiently united at six weeks to allow partial weight bearing without a below knee cast however this is probably dependent upon the presence of proprioception within the joint and muscle tension about the joint to aid stability

When weight-bearing commences on a neurologically compromised ankle these mechanisms may be absent and instability results in a disorganised ankle joint with mal union or non union

While we accept that a definitive association cannot be established from two patients we believe that attention should be drawn to these two cases

We suggest that serious consideration be given to early open reduction and internal fixation of fractures of the ankle joint in the presence of neurological compromise

Surgeon Lieutenant Commander Howell is an Orthopaedic Registrar at RNH Haslar Mr Evans is a Consultant Orthopaedic Surgeon at Derriford Hospital Plymouth

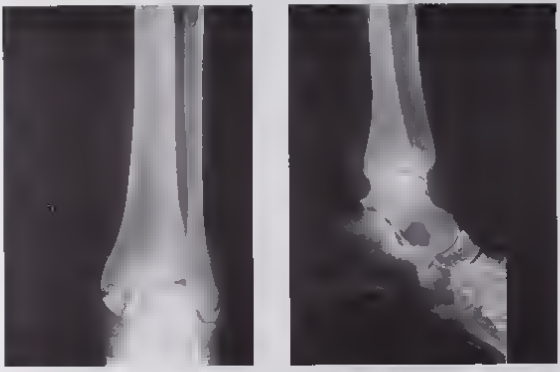
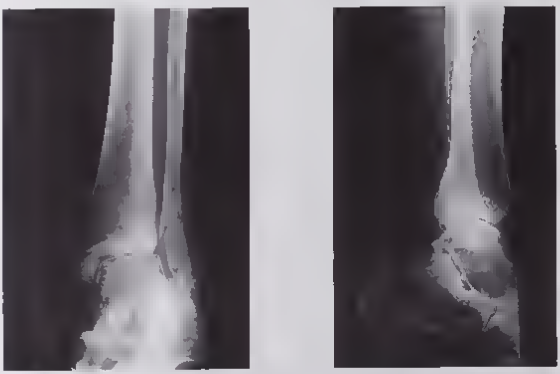


Figure 1



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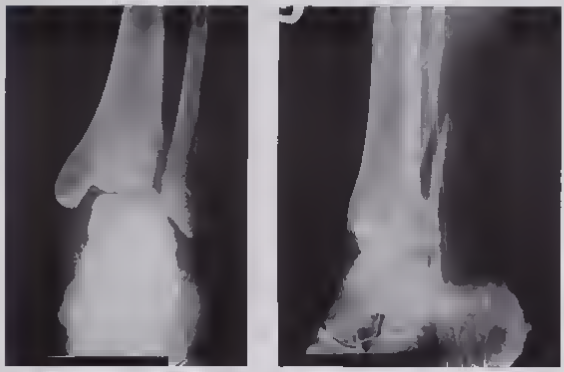

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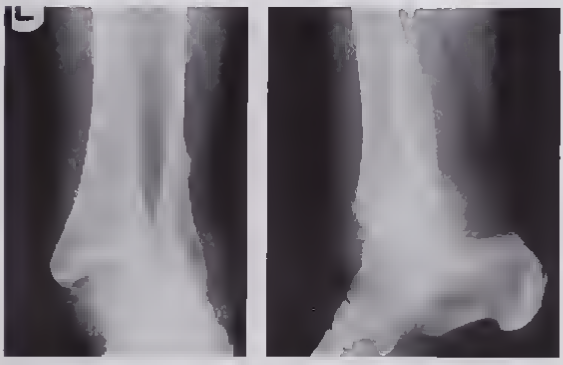

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Training

Submarine Escape from a depth of 300 feet: A personal experience

M S Turner

INTRODUCTION

In April 1993 the staff of the Submarine Escape Training Tank (SETT) HMS *Dolphin* undertook a trial of submarine escape from a submarine submerged in Loch Fyne. At that time I was the SETT Medical Officer and having qualified as an Escape Instructor I was eligible to escape from depths of 45 and 90 metres (150 and 300 feet).

TOWER ESCAPE

When no outside assistance is available the preferred method of escape from a sunken submarine is known as tower escape. The escaper wears a Submarine Escape and Immersion suit (SEIS) (*Figure 1*). This has three functions — see Box 1.

Box 1 Function of the Submarine Escape and Immersion Suit

During Ascent — escape function
1 Buoyancy
2 Provision of air supply

After surfacing — survival function
3 Thermal protection and buoyancy

The escaper climbs into the escape tower (located on top of the pressure hull of the submarine). He then plugs into the air supply with the valve located at the left wrist (Hood Inflation System — HIS). The air flows up the pipe sewn into the left sleeve of the SEIS into the back of the stole (a lifejacket with relief valves to allow the escape of excess pressure) which provides some buoyancy for the ascent. When the stole is full the pressure relief valves on the front of the stole lift and allow air to flow into the hood thus supplying the escaper with a hood full of air to breath. The hood provides further buoyancy.

The next phase involves the flooding of the tower with sea water. The pressure is kept constant initially by a vent which allows air to leave the tower as the sea water from outside enters. The vent opening is situated at approximately chest height and when the water level reaches this the tower operator closes the vent valve. At that time the water is continuing to enter the tower from outside and the remaining air cannot escape thus increasing the pressure within the tower at an exponential rate. During the rise in pressure the escaper has to do three things: maintain his lung volume by breathing in; clear his ears so as to avoid ruptured tympanic membrane and remain plugged into the air supply. The flooding of the tower initially reduces the volume of gas to be compressed and enables faster compression rates to be used. A faster compression rate reduces the total time under pressure and therefore reduces the risk of decompression illness.

When the pressure inside the tower equalises with the external pressure the upper lid previously held shut by water pressure alone opens automatically. The escaper now highly buoyant floats out of the tower and begins his ascent. As he rises the air both in his body and in the suit expands. The air in the stole escapes via the pressure relief valves into the hood and from there is vented from the hole at the bottom of the hood into the sea. The escaper has to breathe in and out without holding his breath so as to allow the expanding air to escape from his lungs into the hood.

Surgeon Lieutenant Turner is currently appointed to the RNDHU Derriford Hospital Plymouth.

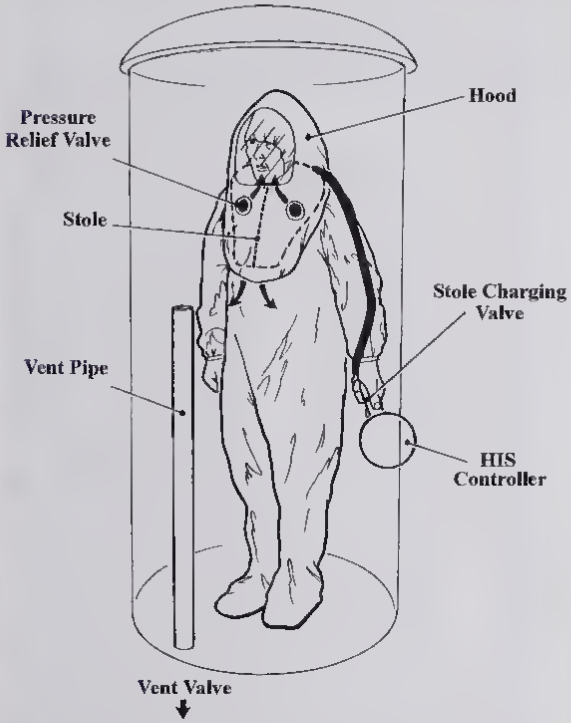

Figure 1 An escaper in the escape tower

BACKGROUND

I was appointed to HMS *Dolphin* in July 1993 as Medical Officer Submarine Escape Training Tank (MOSETT) following a six-month period of training in Diving Medicine at the Institute of Naval Medicine. The SETT is a tank of water 100 feet deep at the bottom of which is a replica of the escape tower. This effectively simulates submarine escape in order to train submariners in this technique.

Following the example of two former MOSETTs, Drs Andrew Scott-Brown and Andrew Mostyn (then Surgeon Lieutenants and currently Hampshire General Practitioners), I trained as a Submarine Escape Instructor (SETI).

Initially I was trained as if I were a new submariner. This entailed a medical, lectures and four ascents through the water of the SETT. Three of these were buoyant ascents using the modified lifejacket or stole during which I had to blow out constantly in order to avoid pulmonary over-inflation and the final ascent was a tower escape wearing the SEIS. During this training I was monitored and guided by divers in the water of the SETT. These divers use no breathing apparatus and merely wear swimming trunks, goggles and a home made nose-clip. These 'breath-held' divers are the SETIs.

In order to qualify as a SETI I was trained for about three months in breath-hold diving techniques. At the end of the training period a SETI is able to descend to the bottom of the tank (30 metres) and return to the surface on the same breath and make a free ascent from the diving bell (27 metres). A free ascent involves using the lungs to control buoyancy as the diver ascends through the water the gases in the body (mainly in the lungs) expand and displace more water, thus giving increased buoyancy and a tendency to ascend faster. In order to control this the diver blows air out continuously. If he is ascending too fast he blows out faster or if too slowly he blows out less. If he should blow out too much he will cease to be buoyant and sink; if he blows out too little he will accelerate to the surface and risk a burst lung. The free ascent should take about two minutes altogether.

I eventually mastered these techniques and after three more tower escapes my training as a breath-held diver was complete.

Once qualified SETIs make at least one tower escape per week and sometimes several escapes in a day. Therefore prior to our escapes at sea the SETIs would have all been very familiar with making tower escapes in SETT. In addition to this all of the SETIs taking part undertook practice escapes in the week leading up to our at sea escapes.

PERSONAL REPORT

Eighteen qualified escape instructors volunteered to take part and undertook a 45 metre (150 feet) escape on the first day and a 90 metre (300 feet) escape on the second. This number included three personnel from the medical branch: POMA Paul 'Scouse' Donoghue, LMA Dave Edwards and myself. Personnel from the submarine were allowed to make escapes from 30 metres provided they had made a tower escape at SETT in the months leading up to the exercise. Medical support was provided by Surgeon Commander Peter Benton and Surgeon Lieutenant George Ogden.

The 45 metre escape was similar to the training escapes done by all submariners in the SETT the only difference being that the water was cold and it was dark. The 90 metre escape was rather different with much faster compression rates and the added problem of the air becoming hot and viscous at the greater pressure. Prior to the 90 metre escape all escapers watched the tower pressure gauge during their predecessors escape. The exponential rise was dramatically demonstrated on the analogue pressure gauge! All escapers were fitted with a depth/time recorder to measure the pressure changes during the escape. The depth/time record for my 90 metre escape is *Figure 2*. Just before 1500 on 23 May 1993 I climbed into the tower in the forward escape compartment of HMS *Oracle* and plugged into the air supply. I reported that I was ready and the lower lid was shut below me. The escape tower in a real submarine is a little smaller than that used in training (obese submariners take note) and although only 5ft 7in tall I wedged myself snugly into position with my feet on the first rung of the ladder in front of me and my head pressing on the upper lid so I could feel when it opened. Although not too late to turn back (all participants were volunteers) I wondered why I had been foolish enough to volunteer and gave the signal to commence the flooding of the tower. Almost immediately the thundering sound of water entering the tower commenced. There was no real increase in pressure initially but when the pressure did start to increase it did so at a dramatic pace: indeed the pressure doubled every 5.6 seconds. After about 10 seconds of pressurisation I felt the pressure in my left ear building up. I cannot

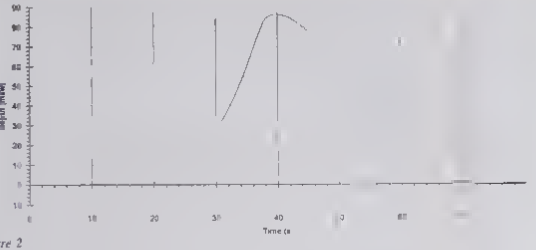

Figure 2

remember much pain just the whistling of air through my Eustachian tube under the force of an extreme Valsalva You can imagine my satisfaction as the pressure equalised Then I felt the compression on my chest and realised I had to breathe ia By this time the tower pressure was greater than 50 metres and the compressed gas was both hot and viscous (most diving deeper than 50 metres is done with Helium/Oxygen mixtures with reduced viscosity) and I felt the hot gas burning as it entered my lungs

To my great relief I felt the upper hatch open above my head and I could not prevent myself from rising out of the tower due to my considerable buoyancy The open hatch brushed against my back as I left the tower (the submarine was under way) and so I commenced my ascent I was temporarily dazzled by a bright light outside the tower (illumination for a video camera on the submarine casing) before being plunged into the darkness of a Scottish Loch 300 feet below the surface As the water rushed past me the colour gradually returned Starting as black passing through dark green and then blue it seemed an eternity as the blue colour became brighter and brighter and then suddenly there was the blinding white light of the sun which had come out just a few moments before A maximum speed of ascent of over three metres per second reached just prior to surfacing meant that as I broke the surface all but my feet bobbed up out of the water like a cork I then fell backwards giving the thumbs up signal triumphantly to indicate that I was well The whole ascent had taken only 30 seconds

The recovery boat was alongside me almost immediately and I was returned to the diving tender for observation Surgeon Commander Benton examined my left tympanic membrane and reported that I had Grade 3 otic barotrauma but thankfully no perforation I was entirely well otherwise with no symptoms of decompression illness

All 18 men who undertook an escape from 90 metres did so successfully There were no cases of decompression illness nor pulmonary barotrauma There were five cases of otic barotrauma two with perforation of the tympanic membrane one with reversed ears and two minor cases All cases resolved completely within three weeks and showed no deterioration in their audiograms In the past submarine escapes using the current escape system have been successfully completed from a depth of 180 metres [1] At this depth there is significant risk of decompression illness In the unhappy event of a real emergency the tower escape method provides a real possibility of escape without any outside assistance

Acknowledgements

The author wishes to acknowledge the assistance of Bob Mackenzie and Graham White both from DRA Alverstoke for the cover photograph and the graph respectively and the Graphics Department RNH Haslar for the illustration of the suited diver

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Elective Report. Cape Town, South Africa

M A Fisher

Standing on the Cape of Good Hope on a clear day looking out on the line marking the meeting of the Indian and Adantic Oceans remains one of the top memories of the whole three months It is an evocative place not least for a sprog sailor Those cliffs are part of a spine of old rocky hills that begin at the face of the Table Mountain looming over downtown Cape Town and stretch down to the very point itself Flying into the city airport these peaks fill the view and all that one heard about the city s beauty seems true White cloud streams off the Table and the blue ocean washes against city beaches The plane falls and the view changes now the white washed villas and apartment blocks and sub tropical gardens are replaced by townships of the Cape Flats areas Having seen these places so often on the news it is a strange experience to witness the shanty towns jumbles of wood plastic and corrugated iron against a background of the Cape s natural beauty Although the 200 bed Victoria Hospital in which I spent the official studying part of the elective was positioned such that it served much of the South-Eastern townships and prisons as an accident and emergency facility it is situated in the comfortable surroundings of Wynberg and the wine growing suburb of Constantia When out in these areas, or at the beach or in the town at the Waterfront bar complex it was easy to forget the other Cape Town There are beggars and street kids and late night public transport is minimal and can be dangerous (Cape Town is a diffienlt place to live without a car) but life for the white collar set is very comfortable

The Cape region outside the city is considered the most attractive in South Africa and weekend jaunts along the South Coast Garden Route or up to Stellenbosch to tour the vineyards are essential Touring is also important to acquire a clearer view of South Africa since the hospital perspective alone would leave you wondering how any South African reaches adulthood at all

The casualty waiting room on Friday and Saturday nights looks like a battlefield clearing station (but smells like an old brewery) Alcoholism is a huge problem particularly on pay days with men beating seven bells out of their partners who then bide their time until their assailants are completely drunk before giving it back with interest It was not uncommon to peel back a blood soaked towel clutched to the head of a man complaining of a headache to find an axe still embedded Alcoholic cirrhosis was also the cause of the most spectacular upper and lower GI bleeds and is surprisingly common One reason for this is that some vineyard owners pay their black or coloured labourers in part with wine Guess who picks up the pieces?

With an all but complete cessation of political violence (in Cape Province at least) gunshot wounds are now relatively rare and although it is said that Kalashnikovs can be bought for as little as £50 00 without ANC or PAC military wing supply ammunition is extremely hard to come by Many whites still carry side arms everywhere and to see pubs with racks of steel boxes outside for depositing guns is quite an eye opener It also cuts down on bar fights and no one argues about spilt pints Not for long anyway

This lack of firearms does not take anything away from the population s frankly astonishing capability for inflicting serious injury upon each other Ferocious and commonly alcohol fuelled attacks with blunt and sharp objects road vehicle accidents and creative, if abortive suicide attempts could all be witnessed on an almost daily basis

On my first day there a man was brought in with a crush syndrome secondary to a sjambok (hippo hide) whipping inflicted by two ladies of his acquaintance which unfortunately proved fatal

There were many late presentations of knife and machete-type woundings in an effort by the assaulted to prevent police involvement As in many deprived urban areas gangs have formed and a lot of the trauma was gang related often centred around battles for control of the unbiquitous mini-bus taxi operations Lives

Surgeon Sub Lieutenant Fisher is a Medical Cadet at St Mary s Hospital Paddington

were saved effectively and revolvingly by the local maggot populations often to be found having a ball debriding old wounds

Perhaps one is on dodgy ground morally wishing for these things to arrive at the doors since experience must come as a result of a person's injury Practice does make perfect however and working in Victoria Hospital a competent student is expected to get stuck in to their heart's content with practical procedures and management decisions So double gloved masked, aproned and goggled my clinical skills improved exponentially far and above what any book could teach

Working in a trauma unit one is exposed to a bleaker aspect of the South African way of life It is a violent society and you still have to be careful to make sure that traumatic events are something that happens to other people The lot of the average black or coloured African has not changed with the elections in fact upon which extremists play upon but overall there is an air of hopefulness and a willingness in most to make a go of Nelson Mandela's 'Rainbow Nation' I will never forget his standing ovation at the opening ceremony of the Rugby World Cup

Cape Town is a lovely city the country is varied and nowhere is too far apart Within hours of the Cape are deserts, green coastal plains and ancient mountains In retrospect it would have been interesting to have spent perhaps four weeks in a rural hospital in Kwazulu to get a better deal for Africa but there is always a next time

RESEARCH ABSTRACT

Watkinson G E. A study of the perception and experiences of critical care nurses in caring for potential and actual organ donors implications for nurse education *Journal of Advanced Nursing* 1995 **22** 929 940

This paper describes a research study designed to explore the knowledge, perceptions and attitudes of practising critical care nurses towards caring for 'brain stem dead' cadaver organ donors and their families The influence of formal nurse education and experiential learning were investigated together with what nurses felt could better prepare them for this role Data were collected through self completion questionnaires from 103 critical care nurses. This was instrumental in forming a semi structured interview schedule whereby seven respondents were interviewed The findings of the study suggest that nurses are very favourable towards organ donation and this correlated with their knowledge of brain stem death ($p<0.024$). Nurses with between six and 10 years critical care experience had a significantly higher knowledge base ($p<0.05$) than those of less or greater experience Nevertheless when challenged some nurses were less comfortable with the concept of brain stem death and caring for these patients A degree of cognitive dissonance was identified Discussion revealed that all nurses need to have a better understanding of their role in organ donation no matter what nursing discipline they practise This may help to expel some of the myths that have undeservedly become established and given the donor process a rather sinister image

Lieutenant Watkinson QARNNS is a Nurse Tutor at the Solent School of Health Studies Portsmouth University

J roy nav med Serv 1995 81 216 219

Medical Ethics and Law

Medical protection for serving medical officers

J Hickey

INTRODUCTION

Dr John Hickey joined the staff of the Medical Protection Society as medico legal adviser in 1985 and is now Commercial Director He was the project manager for the design and implementation of the Central Negligence Scheme for Trusts After qualifying from St Mary s Hospital Medical School in 1977 Dr Hickey completed a short service commission as an anaesthetist with the Royal Air Force In this third article in the series on medical protection organisations Dr Hickey outlines the most common situations in which in his experience medical officers may turn to such an organisation for advice and assistance and discusses the support provided to serving medical officers by the Medical Protection Society in a number of recent cases

COMPLAINTS

Complaints from patients may arise from any and every aspect of treatment — from a decision whether to visit a patient telephoning in the early morning to pre operative counselling or postoperative care The MPS frequently assists medical officers who are subject to a complaint and our experience in handling these cases can often prevent a complaint leading to a disciplinary action or to litigation

Case Study 1

A medical officer carried out an examination on a young man wishing to enlist in an army reserve regiment He was of the opinion that the recruit had a cardiac murmur and as such was unsuitable for enlistment The MO explained to the recruit that many murmurs are in fact innocent and that it was open to him to re apply if a cardiac assessment established this to be the case

The young man s father wrote a letter of complaint to the Commanding Officer of the regiment about the conduct of the medical from which his son had returned distraught and in tears Examination by his own GP the following morning had apparently revealed no cardiac abnormality although he had been advised to make an appointment with a consultant cardiologist for a full cardiac assessment Amongst other allegations the father suggested that the MO had crumpled up the recruit s form and thrown it into the waste basket in front of his second son the next candidate for examination He suggested that he would be ranking a formal complaint to the General Medical Council and possibly taking legal action for the trauma caused by the doctor s irresponsible and thoughtless diagnosis

The medical officer contacted the MPS for assistance Given the threat of further legal action, the MPS obtained the advice of solicitors in drafting a response Although the solicitors mentioned that it would have been preferable had the doctor specifically told the recruit to visit his GP the response comprehensively countered the allegations and corrected the inaccuracies in the father s letter of complaint with the result that no further action was taken

INQUESTS AND COURTS MARTIAL

The MPS frequently advises and assists members who are called to give evidence at an inquest In very rare cases inquests can lead to manslaughter charges — in which event the doctor will definitely need specialist legal representation Courts martial may also result

Dr John Hickey is Commercial Director of the Medical Protection Society

from alleged medical negligence In such cases — as in every case in which the MPS provides support for members — the MPS acts not for the Ministry of Defence or on behalf of any other party but for the member alone

CONFIDENTIALITY AND OTHER ETHICAL DILEMMAS

Perhaps the most fundamental principle of medical ethics is that all which passes between patient and doctor in the course of a professional relationship is secret This principle can sometimes bring the civilian doctor into conflict with others such as the police and lawyers Medical officers in the Armed Forces may be subject to a particular conflict of interests in relation to patient confidentiality.. as a Commanding Officer can request disclosure of any relevant medical information held by his medical officer [1]

Case Study 2

An NCO in the Irish army was instructed by his company commander to perform a two-month tour of security duty As the NCO s medical grade precluded him from overseas service he refused to carry out the orders and allegedly abused the commander The commander telephoned the company medical officer saying that he wanted to teach Sgt a lesson and requesting the MO to find him fit for border duty The doctor replied that while sympathising with the commander s position he would assess the NCO s fitness for duty on professional medical grounds only

The NCO was 42 years old overweight a smoker and was taking medication for hypertension Following a full assessment the medical officer found him not fit for border duty and advised him to return in ten days for a further blood pressure check

The medical officer was later informed by the Comm and Medical Officer that the commander had disregarded his medical report and ordered the NCO to carry out border duty The commander had also made a written complaint about the medical officer to the General Officer Commanding The CMO quoted the letter to him although he said that he had been instructed by the Command Adjutant not give the MO a copy of the letter The letter stated that the MO s actions in finding the NCO not fit for duty had placed him and his company in a very difficult position and that the medical officer had directly undermined the commander s authority

A second problem subsequently developed when the commander requested an explanation of why two personnel had been granted sick leave The medical officer contacted the MPS for advice on these two problems

In the first case the MPS legal adviser provided reassurance that As Medical Officer, whatever the differentiating rank between yourself and those requesting your services you have a clear duty of care to the individual patient and any opinion re fitness rests upon your clinical judgement alone She added You are not there to rubber-stamp a colleague s desire single mindedly to ensure a member of his command carries out a certain duty regardless of his personal circumstances The MO was advised to request an interview with the General Officer Commanding in order to ensure that the commander s complaint was conducted by the correct procedure

In the case of the commander s request for information on the two personnel granted sick leave the MPS assisted the MO in drafting a response The MPS confirmed that a medical officer needs to be guided not only by military law but also by guidelines laid down by the national Medical Council An employer does not have the right to be informed of the clinical details of illness or injury without the consent of the patient and — even in the defence forces — the significance rather than the precise details of the medical findings should be conveyed to any third party

EXCEPTIONAL CIRCUMSTANCES

In conflict situations — at sea for instance or on exercise in a remote area — service doctors may be required to provide treatment in very difficult circumstances A complaint or claim resulting from this treatment may not be brought until months or even years later when memories of the conditions under which treatment was given had faded Furthermore in preparing the case for a possible court hearing expert medical opinions on the treatment may be obtained from doctors with no experience of or possibly not even aware of these conditions The support of a medical protection organisation with experience and understanding of the medical officer s working environment is vital to ensuring that any exceptional circumstances are taken fully into account

Additional pressure often arises from the intense public interest in such cases and the resulting trial by media which may be

compounded as the following case illustrates by inaccurate reporting.

Case Study 2

A national newspaper reported the death of a British soldier serving with the UN in Bosnia. The paper reported that a certain medical officer had been in attendance and that the soldier had died within minutes. The MO contacted the MPS for advice since the soldier died instantly not some minutes later. She was anxious that the relatives would read the press report and possibly conclude that inappropriate treatment or delay led to the soldier's death.

The MPS advised the doctor that although it could certainly be arranged for a correction to be published on a personal basis it would be preferable if the Ministry of Defence or Royal Army Medical Corps took up the matter officially to have the press report corrected. On contacting the Army public information officer the MPS discovered that the misreporting had arisen from ambiguities in the press briefing issued by the Army. The briefing stated that the incident occurred at 1046 with death declared at 1105, giving an impression that treatment had been inappropriately delayed. In fact resuscitation attempts began almost immediately but this was not made clear in the reporting of the incident.

The Army information officer agreed to re-brief the journalists so that the record could be put right. The MPS also suggested that the member might write to the soldier's family to express sympathy and condolences and to let them know the correct facts.

PROFESSIONAL MEDICAL INDEMNITY

The Ministry of Defence provides indemnity for medical claims arising directly out of a medical officer's professional service work reflected in the reduced MPS subscriptions for MOs. As detailed below however there are a number of situations in which medical officers may need to apply to the MPS for assistance in relation to a claim for damages.

SERVICE PRACTICE

There may be occasions when the medical officer is not satisfied with the Ministry of Defence's handling of a claim arising from on duty treatment. For instance, the MoD may decide to settle a claim for financial legal or practical reasons or to admit liability despite the existence of expert medical opinion to the effect that the doctor's treatment was not negligent. MPS advisers are available for advice and support in such cases and can take up the matter on the member's behalf to argue his or her case with the Treasury Solicitor.

Case Study 4

A junior officer a member of the MPS training in anaesthetics was concerned when onsite consultant cover for neonatal resuscitation was withdrawn and replaced by telephone advice and an outpatient service every two months and was made responsible for all neonatal resuscitation and if necessary transfer to the nearest civilian neonatal intensive care unit some ten miles away. Although he had received four weeks preliminary training in neonatology he stated that consultants in obstetrics and gynaecology and other staff shared his concern for their patients' welfare and their own liability in the event that some permanent harm should come to a baby who required resuscitation by an anaesthetist acting outside his area of primary expertise without specialist backup. This had not changed his CO's decision. Since he was obliged under his Service's Act to comply with the order to undertake these duties the anaesthetist wrote to the MPS for advice.

The MPS medico legal adviser confirmed that the member had no option but to work within the system decided upon by his CO but had a duty to make his concerns known to the senior medical staff. In the event of a baby coming to harm with negligence alleged the standard of his peers by which his medical care would be judged was that of a junior anaesthetist — rather than the paediatric consultant or junior paediatrician whose role he might be said to have undertaken. Finally the member was reassured that as a member of the MPS he would of course be entitled to apply for advice and assistance in respect of any such allegation or resulting disciplinary action related to his professional practice.

PRIVATE MEDICAL PRACTICE

Many senior medical officers work as consultants in private practice for which membership of a protection society is essential. Junior staff may also carry out GP locum work. The Ministry of Defence does not offer indemnity or provide any assistance if the medical officer faces a claim of alleged negligence arising from civilian practice.

CONCLUSION

As the case studies related above illustrate although the Crown will now indemnify a serving medical officer for an award of damages arising from a medical negligence claim such cases form only a small part of the medico-legal problems which an MO may face As a result service MOs are well-advised to maintain membership of a protection organisation if only for peace of mind

REFERENCE

1 Morgan D Medical Ethics and Law — Medical Confidentiality in the Armed Forces *J Roy Nav Med Serv* 1994 80 168 170

A recent Nuclear Support exercise crowded the Rock of Gibraltar with Medical Services officers Here Commander Derek Golding Lieutenant Commanders Mick Walker and Sean Holder Lieutenant Tim Ryder and Sub Lieutenant David Miller join Commander Derek Shone in front of the Gibraltar Officers Mess at HMS *Rooke*

J roy nav med Serv 1995 81 221 230

History

Care of World War II convoy casualties in the Kola area of North Russia. Part 1 — Initial arrangements

G H G McMillan

Based on a report by the late Temporary Surgeon Lieutenant Commander James M McEwan RNVR supplemented by material from other sources and recent recollections of staff and patients

Abstract

During much of World War II the Allied Arctic Convoy Route to North Russia was a vital lifeline to sustain the Russian contribution to the defeat of Germany Until convoys were unopposed by enemy forces but it was not long before these joined the fearful elemental forces of the northern seas to reap a rich harvest of war material and human life Survivors who reached North Russia frequently required skilled hospital care but sadly this was not available to any in the initial year or so of the operation Conditions in host country hospitals are described in this part of the paper The contribution of the Royal Naval Auxiliary Hospital which was eventually established in the autumn of 1942 under the charge of Temporary Surgeon Lieutenant Commander James Murray McEwan RNVR will be described in Part 2 of this paper which is to be published in the Spring 1996 issue

INTRODUCTION

On the outbreak of the Second World War James Murray McEwan the thirty year old doctor of the cruise liner SS Montrose was commissioned in the Royal Naval Volunteer Reserve (*Figure 1*) Following service in Atlantic convoy protection in October 1942 he was appointed to the Royal Naval Auxiliary Hospital North Russia then being established at Vaenga on the Kola Inlet about halfway between

Figure 1 Surgeon Lieutenant Commander M [illegible] in 1934 Photo supplied by Mrs Edgar

Murmansk main terminus for Arctic convoys lying to the south at the head of the inlet and Polyarnoe across the inlet to the west where the Senior British Naval Officer North Russia had his headquarters in a Russian submarine base He was in charge of this hospital until October 1943

When he died in 1993 a bound typescript

Surgeon Captain McMillan is the Dean of Naval Medicine

entitled The Royal Naval Hospital North Russia September 1942 to September 1943 was found amongst his papers and passed to his niece Mrs Ann Edgar who encouraged by her neighbour in Skye Vice Admiral Sir Roderick MacDonald kindly sent it to me as Editor of this Journal Initial researches revealed that little had been published about the care of casualties in this area of operations and excited my interest

I am indebted to members of the Royal Naval Medical Branch Ratings and Sick Berth Staff Association the North Russia Club and the Arctic Convoy Club for helping to supplement Dr McEwan's report They have shared memories with me some telling their story for the first time stories of privation sinkings death mutilation and dreadful hardship yet so often softened by the recollection of a prank or joke some kindness given or received Some have provided photographs taken and brought home at personal risk — Russian troops searched the kit of returning Royal Navy personnel before allowing them to board their ship

I hope that this paper written with the permission of Mrs Edgar and my correspondents succeeds in blending these sources and extracts from published histories to form a fitting tribute to the men of the Arctic convoys and the officers and men of the Royal Naval Medical Service who sought to bring relief to the sick and wounded in North Russia and particularly at Vaenga

THE ARCTIC CONVOYS

When Hitler invaded Russia in June 1941 Winston Churchill broadcast to the Soviet Union promising all possible assistance against the common enemy This came to include delivery of war materials by sea convoy to ports in North Russia whence were supplied Russian troops fighting on the long border south and by the vital 1000 miles of single railway track south to Moscow and beyond to the front passing in some places no more than 50 miles from the attacking Finnish and German armies

Convoys assembled in a Scottish port or natural harbour such as Loch Ewe or Scapa Flow and in Iceland then sailed through the Norwegian and Barents Seas some of the most tempestuous areas of water in the world The first convoy left Iceland in autumn 1941 when the Battle of the Atlantic was at its height It included the aircraft carrier HMS *Argus* carrying 24 Hurricane fighters of Number 151 Wing RAF (*Figure 2*) Her present day successor is well known to many members of the RNMS as she houses one of our principal medical assets afloat

In summer the ships had access to both Murmansk and through the White Sea Archangel and there were several choices of route through the Arctic Ocean giving plenty of sea room for manoeuvring They were however exposed to enemy observation throughout 24 hours of unbroken daylight for weeks on end Winter brought the protection of long hours of darkness and even more appalling weather but the drift ice forming the northern edge of this ocean then extended so far south as to leave only 80 miles of navigable sea between its edge and the North Cape Moreover access to Archangel was denied to the convoys as the White Sea froze the convoys were funnelled towards Murmansk on the Kola Inlet This port built by the British to supply the Tsar in 1915 takes its name from the local dialect word for the edge of the earth

Fairly thinly escorted convoys ran uneventfully through the summer and autumn of 1941 but from January 1942 the limited sea areas and especially the approaches to Kola were ideal hunting grounds for the enemy and an increasingly rich harvest was reaped by German forces from the growing number of submarine destroyer and air bases along the northern coast of Norway The route became too hazardous for summer operations and in 1943 summer convoys were discontinued Convoys were also suspended for some time in autumn 1942 when much of the British Home Fleet was diverted to participate in Operation Torch the amphibious landing of 100 000 men on to Vichy French North Africa a small number of ships made single runs to Russia giving the illusion of the supply line being maintained

The value of the convoys to the Allied war effort is reflected in the persistence of the enemy attacks operations which continued even when Soviet troops were virtually at the gates of Berlin Sir Dudley Pound First Sea Lord deemed the Arctic convoys the most hazardous of operations most unsound with the dice loaded against us in every direction Neither ships nor their companies were prepared for the Arctic war Even new Royal Navy ships had poor living conditions with inadequate heating and severe condensation in the mess decks The armament could not be prevented from freezing let alone the men who manned the open gun positions Fortunately the enemy was similarly affected

The men were a mixture of regulars RNVR and Hostilities Only many sent afloat after only

Figure 2 The aircraft carrier HMS *Argus* underway 29 August 1941 Imperial War Museum FL 941

a few weeks initial training Most overcame fear anxiety and cold to perform efficiently Some including medical staff were magnificent showing outstanding courage selflessness and fortitude All the men knew that if they survived the sinking of their ship their only hope was speedy rescue from the freezing sea choking black oil float or open lifeboat Sadly many did not survive the operation By the time the last convoy JW67 arrived in North Russia in the summer of 1945 21 Allied warships and 98 merchant navy ships had been sunk and 829 merchant seafarers and 1944 naval personnel had become casualties

INITIAL MEDICAL PROVISION FOR ALLIED PERSONNEL IN NORTH RUSSIA

Many of those who survived the attack on their ship perhaps compounded by terrible privations of days in lifeboats and rafts required urgent medical care and often hospital treatment when they were landed at Archangel or Murmansk For the first year of the Arctic convoy operation there were no British hospital facilities to care for the seriously sick and wounded amongst the survivors and Allied personnel serving ashore and throughout the operation many had to take their chance in local Russian hospitals

The possible need for arrangements in North Russia for the reception and treatment of large numbers of seriously injured casualties from the Arctic convoys appears not to have been foreseen at the outset and while the convoys ran uneventfully for the first six months of the operation This oversight continued even after the first attacks began in January 1942 probably because as was commented upon in the official history reports from North Russia advised that there was work for no more than one medical officer at Archangel (which would have been closed by ice) and moreover commented favourably upon local hospital accommodation and treatment

By July of that year ships medical officers were reporting and today they and survivors treated in these hospitals recollect that the Russian medical facilities around the Kola Inlet

where Allied casualties were taken for treatment were primitive dirty and often bomb damaged Frequently there were neither antiseptics nor anaesthetics bandages and dressings were at a premium and drugs were in very short supply Survivors were crowded together in abject misery sharing insanitary conditions and unpalatable poor quality food with wounded Soviet civilians and Service personnel It was not surprising that gangrene and amputation were common consequences of frostbite and immersion foot

Two accounts one from a merchant ship gunner and the other by medical officers of HMS *Edinburgh* bear painful witness to the privations they and their fellows faced

The Gunner's Tale

My ship in Convoy PQ13 was sunk in March 1942 120 miles from the coast I spent four days in a lifeboat before being picked up and taken to a hospital in Murmansk There was an air raid on at the time No-one seemed to take any notice of it I found out later that they were continuous I had my sea kit on with my duffle coat over my shoulders I felt shattered

We were told to strip to drop all our clothes in a heap I took my boots off My feet were only damp though they had been four days in the water The leather sea boots had saved me My feet were cold and part numb my fingers were numb We were told to get into a bath not a lot of water in it Some of the others were on boards on top of baths and were being washed down by ladies with a shower spray This was the first time I saw how bad they were One had his leg black way up

All this time we were being bombed What a relief to stretch out in bed though I didn't know who had used the sheets before me The beds were very narrow put two up to each other and then a very small gap before another two They had a lot of Russian casualties from the front which was about 15 miles away and they put three into two beds

A lady doctor came and she looked at my feet and hands I remember her pan banging on the bed irons She would be about forty or fifty and seemed old to me — I was only just twenty years old then A chat with one of the nurses and she passed on They all smiled at you The nurses rubbed goose grease on my legs and feet put on some rough brown wadding then grease proof paper and a loose very dark bandage None of the bandages were new The beds were not changed before any one got into them

I woke up during the night Bombs were still dropping They were seeing to a chap in the next bed where the cabin boy had been He told me the cabin boy had died I remember thinking if I go to sleep again who will die next then I was OK and looked round the room It was big The windows were all boarded up and in place of windows they had put big drawings of Russians and the things they had said under them They were drawn in a way that the eyes always looked at you you turned another way and some other was looking at you it was spooky these guys were there all the time

The Chief Steward was in the next bed right up to mine He was in a poor way His legs were black and all sorts of colours to above his knees blues greens bits of red — shiny like patent shoes Later both his legs were amputated After a couple of days they came round and rubbed our chests with more goose grease and rubbed some into small glass jars like little jam jars In them with a taper blew them out and put up to twelve on your chest As they cooled you had big parts of you going into the jar After a while you had trouble breathing and were very thankful when it was over They said it was to get the cold out of your chest

We were fed what the Russians had I think we did a bit better than their own people When the food was put out a girl kept guard on it

The longer we were there the smell was building up I did not know it at the time but most were to lose limbs in the most horrific way and many were to die

HMS *Edinburgh*

On 19 April 1942 HMS *Edinburgh* a 10 000 ton cruiser commissioned in 1939 arrived in the Kola Inlet with the remains of convoy PQ14 A week later the ship's company having unloaded steel plates for the repair of HMS *Trinidad* and taken on the famous gold bullion 28 very sick merchant seaman casualties were embarked from Murmansk Naval Hospital for return to the United Kingdom

The report by Surgeon Commander W F Lascelles Senior Medical Officer dated 5 May 1942 contributed by one of his colleagues remarks on these cases and events of the

intervening week. Twenty four of the embarked men were cot cases, four fractures and the remainder cases of gangrenous frostbite of varying severity. Of the four non-cot cases three were mild frost bite and the fourth was a case of cholecystitis. In the Sick Bay there were already four medical cases, three cot and one non-cot.

When the ship sailed on 28 April the Sick Bay accommodation was taken up by the worst cases with the remainder in stretchers slung in the Seamen's Recreation Space on the forecastle deck and in the Chief and Petty Officers' Recreation Space. All the frostbite cases required immediate dressings and further daily dressings and treatment. One case with frostbite of both feet and hands was given one pint fresh blood transfusion and amputation was performed through the lower third of the right leg. Surgeon Commander Lascelles remarks that it would have been necessary to do other amputations in the course of the next seven days. But other distractions were in store!

On the third day at sea HMS *Edinburgh* was struck by two torpedoes. The first hit was forward and resulting damage required the Sick Bay to be evacuated to permit the shoring of adjacent compartments rendered the Chief Stokers' Bathroom and Seamen's Bathrooms unusable as first aid stations and denied access to some of the medical stores. The second torpedo did not affect any medical aid station or equipment. The injuries caused by the forward torpedo were chiefly in the nature of multiple lacerations and fractures all were suffering from shock and oil immersion. One officer was injured by the after torpedo.

Equipment from the former aid stations was used to establish a fresh station in the port hangar and another in the upper cabin flat where cabins were used for accommodating the casualties the bathroom for operations and the Executive Officer's cabin for storing equipment. The frost bite cases were accommodated in the port hangar in stretchers on the deck. Initial treatment was given to 50 cases in the eight hours immediately succeeding the first damage by torpedoes. Twenty seven of these were able to return to duty. During the next 24 hours further treatment was carried out in combating shock, pulling up fractures (sic) and suturing lacerations.

The ensuing drama and heroism as the ship bravely rebuffed attacks as she sought to reach Murmansk then fatally crippled was abandoned then sunk by torpedo from HMS *Foresight* on 2 May 1942 is told in Pearce's book *Last Call for HMS Edinburgh*. Altogether two officers and 55 men were killed and a further 23 were badly wounded. This casualty list is said to be typical of torpedo attacks a number of men being killed outright and a relatively small number being wounded.

Two of HMS *Edinburgh*'s other medical officers Surgeon Lieutenant D C Lillie RNVR and Surgeon Lieutenant L Cama RNVR have recently added their recollections to the 1942 report of the incident. Their memories include the wonderful seamanship shown by the COs of *Gossamer* (sunk by bombing in the Kola Inlet two months later) and *Harrier* when...as the time came for *Edinburgh* to be abandoned they laid their ships on each side of the casualty allowing the 800 surviving ship's company to transfer (*Figure 3*).

> The three doctors and the wounded were all in the same ship HMS *Harrier* which in retrospect was an error of judgement. However there had been a lot to think about and we were very tired. The casualties were very well received and Surgeon Lieutenant Miskelly RNVR gave great help. He had already a reputation for fine work in the Arctic.

Surgeon Commander Lascelles and his medical staff were singled out for praise in the Captain's report of the loss of the ship. Surgeon Lieutenant Miskelly was awarded the DSC and his Sick Berth Assistant the DSM for services on the Arctic Convoy route in 1942.

On arrival at the Russian Naval Base at Polyarnoe where the Senior British Naval Officer North Russia was based half of the survivors who did not require hospital treatment remained at the local barracks with Surgeon Commander Lascelles and Surgeon Lieutenant Cama while the other half and the casualties re-embarked in *Gossamer* and sailed to Vaenga where the accommodation was more congenial — or certainly less horrible. Surgeon Lieutenant Lillie went on with the wounded to Murmansk.

A day or so later Surgeon Lieutenant Cama joined the Vaenga group. He recalls walking up from the wooden jetty past the long stone barracks which accommodated the Russian Hospital — which was definitely not custom built — then on up a fairly steep hill to a large wooden building which accommodated the ship's company (*Figure 4*). There was a similarly large dining room just opposite. The Officer's Mess was in the upper part of a wooden building close by with Russian officers in the lower part. I walked to the hospital from the Mess twice a day

Figure 3 The minesweeper HMS *Harrier* takes off the crew from the sinking HMS *Edinburgh* on 2 May 1942 Imperial War Museum MH 23867

Figure 4 Vaenga Bay, Kola. The Russian Hospital and later the Royal Naval Auxiliary Hospital was located in the buildings behind the solitary figure. Photo supplied by Mr F Trew

It took me about 45 minutes through deep snow for the first month

Surgeon Lieutenant Lillie took his wounded naval personnel and merchant seamen to Murmansk Naval Hospital where the reality of the arrangements hit us Three months later he was to write to MGD(N) describing the very unsatisfactory state of affairs he found in hospitals in the area particularly in Murmansk He recalls that MDG(N) replied kindly and feelingly and wonders if the report had any affect Perhaps it is sufficient to note that its date 25 July 1942 only shortly preceded the flurry of activity in London which was to result in the establishment of the Royal Naval Auxiliary Hospital at Vaenga

A report by a visiting Medical Officer based at Polyarnoe and quoted in Chris Tye's recently published book The Real Cold War and Doctor Lillie's report and recent recollections together provide a vivid impression of conditions the Russian medical and nursing practices and the staff at Murmansk and other hospitals in the area

The oppressive and suspicious attitudes impressed on the Russian people by their rulers absence of a common language, different outlooks on treatment and their sensitivity rather than envy that what little the British had or were was better than their own combined to raise significant barriers One result was that the Russians were unwilling to let the British medical staff have control of their cases while they were using Russian resources

That said, Surgeon Lieutenant Lillie emphasises that

> The general attitude towards British and Allied casualties was of very great kindness and willingness to help our men They unconvenienced themselves considerably on our account at a very difficult period when their army was suffering heavy casualties in the district The nursing sisters and ward maids (there appeared to be no nurses) were kindly and were always most considerate to the needs of the patients as far as lay in their power this being limited by their lack of training and language difficulties
>
> All in all they were very cheerful good people having a very hard time

The Murmansk Naval Hospital was a converted school a rectangular building of three storeys each floor having a corridor running the length of the flat with rooms opening on each side The lower floor had administrative offices an x ray department dispensary and admission rooms All arrivals were put on a slab and washed as a routine Dr Lillie recalls

> 'On this floor sat a Captain Commissar dressed as a British Surgeon Captain He later bulked very large appearing to have authority over the Fleet Surgeon Commodore Arapov a skilled surgeon but poorly supported There seemed to be little chat among different ranks but much awe

The upper floors had three theatres plaster room and about 20 wards There were between 400 and 500 beds depending on spacing and the number of beds placed in corridors When the *Edinburgh* party first arrived the scene was of great activity everywhere in this building because of the offensive going on at Petsamo about 30 miles away with daily heavy intake of Army casualties The low beds standing about two feet from the floor were pressed even closer than the usual two feet apart There were beds in the corridors even on the ground floor There did not seem to be a separate Army hospital and no Army doctors were seen in this hospital

The *Edinburgh* casualties were put in a large ward formerly the School Hall on the second floor All the windows were boarded up so there was virtually no ventilation and artificial light had to be used constantly There were some 40-50 beds in this hall at the outset but later there would routinely be 70 80 beds and 100 following admission of casualties from the Polish ship *Garland*

Along the corridor of the first floor were very primitive operating theatres with little equipment and very poor lighting In addition there were many poorly lit dressing rooms for wounds Sanitary arrangements were primitive the condition of the lavatories and urinals foul and the smell nauseating Hygiene was poor following the use of bed pans and urine bottles neither patients nor nurses regularly washed their hands Theatre gowns ward staff uniforms and bed linen were changed only infrequently

> Overriding all was the fearful stench of sepsis and by day repeated air raids It was an inspiration to see how our wounded would tolerate the noise of aircraft close overhead with great composure

Food consisted very largely of barley rice rissoles stewed yak soups of good meat stock and compotes made from raisins preserved cherries and apricots No fresh vegetables nor fruit were seen except for the occasional cabbage

The food generally is not welcome to the

British palate. It is unattractively served and hot dishes are usually tepid when brought to the ward. Food for the British and Allied casualties was supplemented by supplies from the Senior British Naval Officer North Russia but even then the position was unsatisfactory.

After bathing and before admission to the ward incoming casualties were taken to one of two dressing rooms where the wounds were examined, operations carried out as necessary and wounds dressed.

The Polyarnoe Russian Hospital. There was a small Russian hospital at the Russian Submarine Base at Polyarnoe. There were about 50 beds with limited equipment for surgery and x-ray examination. **The Vaenga Russian Hospital** was nothing more than an improvised sick quarters in the basement and ground floor of a block of flats. There were about 40 beds. Conditions were described as:

> appalling and had to be seen to be believed. There was no ventilation, constant smoking by the Russians, stale spit bowls and urine bottles on the floor. This mingled with the odour of septic wounds and suppurating compound fractures in plaster to make the foulest atmosphere conceivable. Treatment was lacking and extremely inefficient and generally the standard of medical practice was very low.

MEDICAL PRACTICES IN NORTH RUSSIAN HOSPITALS

Again Surgeon Lieutenant Lillie's report in May 1942 advises:

> "The standard dressings are sterile Dry Gauze, Rivanol (a Flavian derivative), fish oil and Hypertonic Saline. Eusol or other form of hypochlorite is not used while normal saline dressings are disapproved of by Russian doctors. Sulphonamide drugs streptocide and sulphidine are used prophylactically but are not favoured in cases of heavy established sepsis. Our use of sulphapyridine powder with satisfactory results in such cases was not favoured by the local staff. For cleaning the skin around wounds Benzine is used and for the wound surface Hydrogen Peroxide. Normal saline is less frequently used to irrigate wounds. Wounds are dressed with varying frequency. For Allied casualties indications on which we changed dressings were excessive foulness, pain or unaccountable temperature elevation. On the whole I think the Russians tend to change the dressing and interfere with the wound too frequently."

Doctor Leonard Cama has recently observed that the lack of facilities for general anaesthesia was a grave defect in North Russian Hospitals. The Russians relied on burly hospital orderlies to restrain the patients under surgery. In his July 1942 report to MDG(N) his colleague the then Surgeon Lieutenant Lillie provided details of anaesthetic practice:

> Most operations are conducted with a local anaesthetic premedication with Morphine 1/6 1/4 being given immediately pre operatively. That is the standard method and is used for wounds even those grossly infected. The solution is 1/2-1% Novocain injected in great quantities. Regional block is not practised. Most abdominal operations are performed with local anaesthesia. In cases where the duration of the operation exceeds that of the anaesthetic re injection of the area is rarely seen. The patient feels progressively more pain but the operation proceeds the patient being held if necessary.
>
> For dressings of severe wounds likely to cause great pain no narcotic or basal anaesthesia is used. In such cases Nembutal Morphine or Morphine and Hyoscine or Avertin would be of great value but is discounted by the Russian doctors. I have not seen spinal anaesthesia used in Russia but heavy percaine is stocked.
>
> Intravenous anaesthetic is used very sparingly as Nexonal the equivalent of Pentothal. Our own Pentothal we reserved for our own cases with the exception of two Russian soldiers to whom I gave it. Much interest is shown by the Russian Medical Officers in intravenous anaesthesia and most of them have not seen it previously administered.
>
> Only ether is used for inhalation anaesthesia given usually by Clover's Inhaler. The indications are amputations and some cases of abdominal section. Ethyl chloride is used for local freezing and not as a general anaesthetic. Gas and oxygen is not used.
>
> Anaesthesia as a specialty is not practised in the Murmansk area the anaesthetist being always a junior doctor. There is a deficiency of anaesthetic drugs in North Russia and this probably accounts for the very unsatisfactory position but it does also appear that there is a lack of knowledge of their administration.

given among senior doctors which suggests that the cause is not entirely attributable to the war

The British medical staff thought that in general operations were too long deferred and what should have been interval surgery became an emergency with the patient almost *in extremis*. This was particularly true of amputations

In cases of frost bite of the feet which occurred often nature is allowed to proceed till the line of demarcation has ulcerated and become heavily infected At this stage rather than leave the condition entirely alone or perform a planned amputation high above the infected area the infection is spread by tearing away partially necrosed bone and tendon thus what may originally be frost bite of the terminal phalanges of the toes with good lines of demarcation is converted into a lumbrical space infection with following metatarsal necrosis and obvious decline in the condition of the patient

All amputations are of the Guillotine type the Russians having a dread of flaps lest infection occur in the closed space Naturally conditions of operating dressing food and general hygiene predispose to such an occurrence The Guillotine method is used even in the case of air raid casualties admitted to hospital within an hour of injury

Orthopaedic surgery as a separate branch is not practised There is the same tendency to delay as marks other departments of surgery Plaster of Paris for compound fractures is not used as early as it should be This is due in part to the very serious shortage of Plaster in the district This shortage also militates against correction when the position (of fractures) is faulty

NEED FOR IMPROVED FACILITIES

Clearly there was an urgent need for medical facilities in the Murmansk area to more closely match British practices and standards On 1 June 1942 SBNO North Russia signalled the Admiralty requesting a hospital ship capable of dealing with 100 cases or a hospital of similar capacity ashore at the convoy terminus He emphasised that the unit should be self contained both in personnel and all stores There then followed an exchange of signals as to the required site of the hospital Murmansk or Archangel where later investigation showed conditions were as bad if not worse This appears to have resulted in the whole project being placed in abeyance until the end of July when a flurry of signal activity expressed grave concern about medical facilities A request was made that a hospital unit be sent to the Kola Inlet area

This resurgence of interest may have been precipitated by the reports by Medical Officers mentioned above and by the overwhelming demands placed upon medical facilities by very large numbers of survivors and casualties landed in North Russia from Convoy PQ17

After especially severe air raids on Murmansk in mid June the British and Allied casualties who could be moved were evacuated to the more pleasant hospital at Grayaznay (Grasnere) some ten miles distant At the end of June 1942 there were some 25 British and American casualties here Again this was a converted school but it was situated in green fields exposed to sunlight and as the windows were not boarded up the atmosphere was much more pleasant

Sadly the standards of medical care were those described at Murmansk but as Surgeon Lieutenant Lillie remarks, the cases however (apart from two fractured spines and one fractured pelvis) were not so severe as those he had in Murmansk and so the deficiencies were not so obvious Later the Luftwaffe attacked in the area of the hospital

RUSSIAN RESISTANCE TO BRITISH MEDICAL AID

Perversely despite the great sacrifices being made to bring war materials to North Russia the Russian authorities sought to prevent British and Allied personnel being posted ashore insisting that each person had a valid visa and resisting British requests that visas be issued to medical staff In the apparent belief that if a British medical team arrived in North Russia virtually unannounced the Russians would give in and grant visas the medical staff stores and equipment for a hospital unit were embarked at Greenock principally in the cruiser USS *Tuscaloosa* and left that port on 13 August 1942 under destroyer escort Their mission was to establish a Royal Naval Auxiliary Hospital at Vaenga Bay the anchorage on the east of the Kola Inlet which was much used by HM ships The story of the establishment of that hospital and the work of its first year will be told in Part 2 of this paper in the Spring 1996 edition

ACKNOWLEDGEMENTS

Among those who have helped in the compilation of this paper and to whom I owe a debt of gratitude are Mr E R Allan (National Chairman The Russian Convoy Club) Mr F Andrews Mr M Birkett Mr K H Bull Mr Austin Byrne (ex Merchant Ship Gunner) Dr Leonard Cama Mr D Chance Dr Andrew Curran of the University of Glasgow Mrs Ann Edgar ex LBSA G Greenfield Mr T Holt (Editor of The Arctic Lookout) Mr Paul Kemp (Imperial War Museum) Dr P Murray Kerr Richard Kindersley (formerly interpreter on staff of SBNO North Russia) Dr D G Lillie Dr A MacIntre Mr D J Mills Mr Harry Mitchell (Sec SBS Assoc) Mr James S G Mitchell Mr F A N Moody Mr R B Moore Ms Sue Morse (Royal British Legion) Mr C Tye Mr F Trew and Captain Richard Woodman of Trinity House

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Letters to the Editor

Sir

It is tempting at the end of one s naval career to look back and try to impart a few words of wisdom to younger colleagues I do not wish to fall into this trap but nevertheless consider that a few reflections after 31 years service would not be out of place

An often heard phrase at the moment is it is a good time to go things have changed completely for the worse and the future is bleak I find this rather sad Certainly the good old days of married accompanied posts to exotic foreign parts (who can ever forget Mauritius Singapore and Hong Kong) also much relaxed service with the Mediterranean and West Indies Squadrons and a nine month world wide deployment bring back happy memories of friendships made and occasions enjoyed All these occasions and many more contribute to the unique camaraderie of the Royal Navy the Royal Marines and the Royal Naval Reserve — how fortunate one was

But is the future of the RNMS and the AFMS bleak? No it most certainly is not and I was delighted to read MDG(N) s update in the last edition of the Journal Different it most certainly will be smaller and with a much greater emphasis on joint Service cooperation and training leading to greater efficiency for all These changes will also be greatly to the benefit of our patients both in peace and war who can sometimes be overlooked in the emphasis on new organisational structures Exciting also particularly in secondary care with the opportunity to work with our NHS colleagues at all levels thus having the best of both worlds

Surgeon Lieutenant Commander Haddon s plea for closer liaison between colleagues in the primary and secondary care disciplines produced a feeling of déja vu I have always supported this approach and although the future demands greater Tri Service cooperation we must retain our cohesive naval identity — historically we have so much of which to be proud and our traditions are second to none An annual RNMS Conference to include representatives of all personnel throughout the ranks followed by a dinner to be held around Trafalgar Day should surely be something for which to aim

Would I join the RN again 31 years on? — yes I most certainly would — the Service has immense advantages over civilian life particularly in regard to the high standards of moral and social behaviour so necessary in our daily lives Never forget that the RNMS is made up of individuals all with their own talents working for the greater good of the whole

I leave with no regrets and much thankfulness that I and my family have been part of such a vibrant and caring organisation

I wish you all well

ROBERT HARLAND
Surgeon Commodore
Director of Clinical Services

Dear Sir

Having read Surgeon Captain [redacted] Sykes' paper on Tuberculosis and the case history by Surgeon Lieutenant Commander Guy in the Spring 1995 issue of the Journal I would add a story in which the bacillus lay in wait for 63 years before making what might have been a mortal strike.

I am now convinced that the major surgery described by Surgeon Lieutenant Commander Guy was unrelated to the reactivation of tuberculosis.

Seventeen years ago I was asked by a colleague going on leave to take over the case of a 74 year old Norfolk smallholder in unexplained near coma. Three months previously he had had a left hip replacement and prior to his latest admission as in Guy's case a flu like illness. During this he became dizzy and fell over. A few days later pyrexia associated with a cough developed followed by drowsiness and some disorientation.

He was noted to have hypertension and bilateral inguino scrotal hernias. His regular Methyl Dopa and Navidrex was continued and Amoxil for his chest infection was later changed to Septrin. Although there was no neck stiffness because of his confused state a lumbar puncture was carried out the fluid containing low glucose excess globulin and 110 cells per cubic mm all lymphocytes.

An incompletely treated bacterial meningitis was considered likely though TB meningitis was a possibility. No improvement occurred with Chloramphenicol and a brain scan showed no localising lesion but slightly dilated ventricles.

At this stage after 10 days in hospital I was asked to see the patient. My first observation was that his right ear was greatly scarred and deformed and that there was nodular reddening of the skin in the temporal region. A word with his daughter a nursing sister in the hospital who stood outside the door told me that for all her life her father had had trouble with his ear. It had been intermittently inflamed and had been treated with ointments and lotions by a number of doctors for 63 years.

Being of an age to remember the Finsen Light Department at the London Hospital and recalling several Eastenders wearing false noses affixed to spectacle frames to hide the ravages of Lupus Vulgaris. I immediately concluded that that was the disease and that meningeal involvement had taken place possibly via an emissary vein. A later biopsy failed to show bacilli but the histology was that of sarcoidosis or Lupus Vulgaris.

I advised appropriate anti tuberculous therapy immediately and apart from a single epileptic fit he made an excellent recovery. His original condition had begun when he had injured his ear on a nail in his father's cow shed so that possibly the organism was of the bovine variety.

Having read Surgeon Lieutenant Commander Guy's article in the Spring Journal I telephoned my patient's daughter expecting him to have died years ago. He had however perished only a few days previously at the age of 91 from heart failure having survived in the interim the repair of his incarcerated hernias.

Both Surgeon Lieutenant Commander Guy's case and mine show the extraordinary ability of the tubercle bacillus to lay low for long periods. 20 years in Guy's case 63 in mine. Each man underwent major surgery and subsequently suffered a flu like illness before tuberculous infection became apparent.

Being no expert in immunology I would welcome views on the relationship between major surgery and the reactivation of tuberculous disease.

Yours faithfully

G I BOLT, VRD, FRCP

Surgeon Lieutenant Commander RNR (Retd)

J roy nav med Serv 1995 81 232 237

Book Reviews

Advances in Gastroenterology 7 Gastric Ulcer G Battaglia F Di Mario F Vianello Piccin New Library Italy April 1995 Distributed by Gazelle Book Services Lancaster Pp 148 £18 50

Gastric ulcer has received less attention than duodenal ulcer in the recent medical literature due largely to its less marked association with Helicobacter pylori infection As 30 million people around the world are now taking non steroidal anti inflammatory drugs (NSAIDs) gastric ulcer will remain an important cause of morbidity and mortality from gastrointestinal bleeding The relationship with gastric cancer particularly with pre cancerous lesions such as atrophic gastritis dysplasia and intestinal metaplasia is also worthy of separate attention This hardback volume number seven in a series of eight dealing with acid related disorders has been produced by a team of experienced and dedicated investigators from Northern Italy The result is an excellent overview of gastric ulcer presented in an authoritative and straightforward manner

The text is of good quality and well laid out The bar charts are excellent and the tables comparing data from various studies are clear and concise There is little new or unexpected in the content or references but this does not diminish this volume s worth as a well balanced view of established concepts in gastric ulcer I look forward to reading the others in the series

C D Gillen
Head of Gastroenterology
RNH Haslar

Clinical Reasoning in the Health Professions Eds J Higgs and M Jones Butterworth Heinemann Oxford February 1995 Pp 347 £30 00

This is an excellent text focusing on the important issue of reasoning and decision making in clinical practice The book introduces a cyclical model of clinical reasoning with an emphasis on knowledge cognition and metacognition This important integration of context and process is set within a practitioner client and health care relationship The theoretical framework is then developed throughout the book firstly examining the theory from a single discipline perspective then developing a more applied approach Although the book draws heavily on recent research in cognitive psychology it is presented in a very readable way and the collaboration between disciplines emphasises the multi disciplinary approach The international contributors to this text are all acknowledged experts in their own field The book sets a new direction for thinking about how to develop clinical reasoning skills and will be of great value to educators and researchers in health care in particular it should be recommended reading for all student educators An excellent reference book it should be on all library shelves but the multidisciplinary approach although one of its attractions might also discourage the individual purchaser

Philip Russell
RNMSS

ABC of Emergency Radiology Eds D A Nicholson and P A Driscoll BMJ Publishing Group May 1995 Pp 120 UK £14 95 Overseas £16 00

This is an excellent book which is strongly recommended as an addition to the shelves of all Accident and Emergency departments The authors have succeeded in combining high quality line drawings of anatomy and pathology adjacent to very good x ray reproductions The text provides a systematic approach to those body parts of major concern to emergency physicians detailing the anatomy and subsequent injury patterns There are guidelines on indications for radiography with recommended radiographic projections A clear explanation of the justification for different x rays is provided followed by a methodical analysis of x ray interpretation this comprehensive book provides a substantial amount of information for both the experienced and inexperienced Accident and Emergency physician Whilst justification for specific views and discussion on more specialised views are comprehensively reviewed

this text does not pl[illegible] to other more expen[illegible] Although the book is clearly [illegible] a] both reference for emergency procedures it is disappointing to see so few references for further reading With a target audience of Accident and Emergency physicians this would be of undoubted value to general and orthopaedic surgeons in training and to trainee radiologists In summary this is an outstanding book resulting from a very successful collaboration between the authors i e Radiologist and Accident and Emergency specialist whose content and style is strongly commended

L J Jarvis
Consultant Radiologist
RNH Haslar

How to Do It, Volumes 1-3 Ed Deborah Reece BMJ Publishing Group April 1995 £34 95 the set £12 95 each

The BMJ have issued a third edition of this anthology which is split into three volumes They collect together articles new and old which provide a wide range of practical advice on topics outside clinical medicine but which are of vital interest to all doctors

Common sense and the distillation of bitter experience abound in short easily digestible essays on topics including job selection management skills counselling writing or refereeing papers presentation of information and countless other gems The quality of writing is generally high and humour is liberally sprinkled

These volumes pull together information which is difficult to find anywhere else Trainees seeking broad grounding in generic skills will find these books extremely helpful and those in career grades will enjoy the mix of information and a good bedtime read

All three volumes are highly recommended

R J Clark
Department of Medicine
RNH Haslar

Health Promotion in Hospital: A practical handbook for nurses Anita McBride Scutari Press London April 1995 Distributed by Gazelle Book Services Lancaster Pp 103 £11 99

The 1990s have seen a plethora of White Papers and directives urging practitioners to be proactive in promoting health Health promotion has become a buzz phrase which to traditionalists means disease prevention whilst modernists may take a more positivistic and holistic stance Indeed modern nursing supports this philosophy of health promoting practice however in reality this is often seen as rather idealistic coming perhaps low down in the priorities of a busy nurse Anita McBride's book offers some practical advice to hospital based clinical nurses on how to enhance their practice The book is the result of three years work with over 200 nurses in acute wards McBride argues that strategies for health promotion should be focused on changing attitudes behaviour and environment This is supported by linking these strategies into The Health of the Nation targets Whilst there are more weighty tomes providing a deeper theoretical perspective this book is a useful resource not to be kept in the office but rather out at the nurses station where it can be dipped into

G E Watkinson
RNMSS

The Fight for Public Health Principles and Practice of Media Advocacy BMJ Publishing Group October 1994 Pp 200 UK £19 95 Overseas £22 00

This two part text sets out to explain the Principles and Practice of Media Advocacy The first section of about a hundred pages gives an apologia for the subject written in the style of what I did on my holidays by a doctor who declares success in combating the Australian tobacco lobby assisted by an academic whose contribution is long on observation but short on analysis The second part offers a glossary of terms relating to the specialty Though I was surprised that timing was not included in the glossary I have to admit to a persistent smirk following the discovery of Creative Epidemiology

I learn most from my own mistakes but would

have liked to have heard of another's to help me avoid making them myself. Dr Chapman's turgid description of his successes must have left me too somnolent to notice the lessons of his errors.

There is probably a place for doctors to use the tools of the public relations industry in the cause of public health. Professional wordsmiths have produced books on PR which are authoritative, readable and cheaper than this one though they use non medical examples and don't include a section on Creative Epidemiology.

A J Ashworth
HMS *Vigilant*

Practical Study Skills for Nurses. Joe Winters. London: Scutari Press. April 1995. Pp 184. Distributed by Gazelle Books Ltd. Lancaster. £14.99.

Nurse education has witnessed a phenomenal change in recent years often leaving the student to agonize over acquiring various academic skills. With learning being an active process the learner needs to be prepared, motivated and informed which is why Joe Winters' book is an essential addition to any student's reading list.

As an experienced learner he advises on how to confront common fears and anxieties such as exams, peer group teaching and essay writing. Winters encourages the reader to reflect on past learning experiences so as to identify potential strengths and weaknesses. He motivates and reassures the learner, without forgetting those who are somewhat less conscientious. As a result he may be construed at times as being somewhat condescending.

This sometimes witty text is extremely reader friendly and has useful exercises at the end of most chapters. However it is unfortunate that the title denotes this book as being exclusively for nurses as there is relevant material for all students. With little reference to nursing many other students are sure to miss out!

A/D Tina Tonge
Second Year Nursing Diploma Student

Medical Ethics Today: Its Practice and Philosophy. BMA Ethics Science and Information Division. BMJ Publishing Group, 1993. Pp 374. UK £12.95. Overseas £15.95.

This book fulfils a long awaited requirement for a comprehensive practical guide to the ethical problems facing today's doctor. Dipping into it, and this is the best way to use it, even those with a special interest in Medical Ethics will find something extra that provides a flash of insight that furthers their knowledge. Those without that interest should be encouraged to look beyond the somewhat necessarily dry language as it is no longer acceptable to have a "gut feeling" for what's right. In converting gut feeling to informed balanced judgement this book describes briefly the underlying philosophical, legal and ethical issues behind a wide range of issues, many of which appear in the daily press regularly.

Each chapter starts with an outline of areas discussed and ends with a clear summary. Gentle lateral thinking is sometimes required to enable the index to target your enquiry and the cosmopolitan collection of references is intriguing enough to warrant exploration in itself.

If you find references to the Armed Forces rather lightweight and even this is an advance, then contribute to the debate. If you don't then consider the number of conflicting roles we, or our Medical Assistants, play as GP/Employer/Divisional Officer/ Budget Element Manager/Occupational Physician/ Police Surgeon: read Chapter 9 and consider whether this subject warrants a special place on the NEMO course.

This heavy paperback deserves an essential place in any small medical library and should be an indispensable source in shaping the evolution of appropriate attitudes and values of all doctors at all levels. Find it, read, discuss and contemplate for patients and the profession.

D J Ward
Principal Medical Officer
HMS *Collingwood*

Cardiac Rehabilitation. Eds. Dee Jones and Robert West. BMJ Publishing Group. May 1995. Pp 264. UK £29.95. Overseas £32.00.

This is a timely publication reflecting the growing interest in cardiac rehabilitation

following myocardial infarction and cardiac surgery The book is comprised of twelve chapters from an international cast of contributors with input by cardiologists rehabilitation physicians psychologists and an epidemiologist The evolution of rehabilitation from simple exercise training to a more comprehensive approach which includes consideration of psychological factors affecting both patients and their sponses is discussed and the relative merits of hospital or community based rehabilitation are considered

Each chapter is complete in itself reflecting the views of the individual author This has merits but does lead to considerable repetition and as a consequence the book is perhaps overlong Tighter editorial control would have overcome this drawback Nevertheless there are valuable sections dealing with the physiology behind the rationale for exercise training and the evaluation of rehabilitation programmes The statistical benefits of the latter need to be viewed with caution and this applies in particular to the interpretation of psychological rehabilitation

However the book deserves and should reach a wide readership amongst health care workers in this important area of medicine

A R Marsh
Head of Medicine
Royal Naval Hospital Haslar

Management for Doctors Eds Jenny Simpson and Richard Smith BMJ Publishing Group February 1995 Pp 176 UK £12 95 Overseas £14 00

This book has 15 compact inter related chapters which examine medicine doctors and management from all angles The target reader is the clinician (mainly hospital based) who mistrusts professional managers but has enough insight to wish to learn the principles of good management So he is encouraged to recognise the need for clear purpose in his unit how to achieve that purpose by enlisting the help of managers and staff to appreciate how scarce resources might be intelligently apportioned what financial jargon means and so on Bnt for the military reader perhaps the most important value of the little book is its insight into the norms and expectations of civilian medical management at unit or local level — and it is therefore recommended to HODs in MDHUs and Haslar and all who want to understand their new Chief Executive a little bit more

M Macleod
D Med Org(N)

Respiratory Support Keith Sykes *Principles and Practice Series* BMJ Publishing Group April 1995 Pp 260 UK £24 95 Overseas £27 00

This compact monograph is written by one of the doyens of modern ventilator therapy The elegantly written and succinct text outlines the historical background to respiratory support and thus demystifies the reasoning behind current practice Professor Sykes revises relevant respiratory physiology before explaining its application in the logical development of ventilatory techniques Ventilators commonly found on modern intensive care units are then discussed pointing out their advantages and shortcomings The book concludes with an excellent series of chapters on the clinical care of respiratory failure with helpful sections on artificial airways general care of the patient and non invasive techniques of respiratory support This text provides a wealth of wisdom and experience and will help anaesthetists physicians and others with an interest in intensive care to acquaint themselves rapidly with safe management of the ventilated patient It is highly recommended

R J Clark
Department of Medicine
RNH Haslar

Outline of Ophthalmology, Second Edition Roger Conkes and Patrick Holmes Sellors Butterworth Heinemann February 1995 Pp 200 £16 99

Outline of Ophthalmology is a book that medical students will find very readable and easy to understand It provides an overview of anatomy and physiology and a systematic description of ocular disease by symptoms The authors are

to be commended on including in Part 3 sections on diagnostic tests optical aids and common misconceptions However while trying to be brief and comprehensive they do inevitably make some omissions For example when discussing bacterial keratitis no reference is made to the higher incidence in contact lens wearers and the need for a high index of suspicion in such patients Bear track fundal pigmentation is described as benign In itself it is but it may be associated with polyposis coli though the authors do not mention this Just a few extra words could improve patient care There are fewer instances of verbosity! However, retrobulbar neuritis does not really enter into the differential diagnosis of functional visual loss since there would be associated signs I would agree that amblyopia, cortical blindness and possibly malingering do

Overall the book provides a useful and concise first introduction to ophthalmology although it may frustrate the more experienced reader

Susan Hague
Ophthalmic Dept RNH Haslar

Clinical Echocardiography John B Chambers BMJ Publishing Group May 1995 Pp 276 UK £49 95 Overseas £55 00

This highly illustrated book is a delight to read It is a most comprehensive introduction to echocardiography suitable for those doctors and technicians alike who are entering the field of cardiology

It is also three others things Firstly the MRCP candidate would do well to read this as it contains amongst much other useful information nine illustrations of echoes likely to be encountered in the exam

Secondly there are clear tables defining the indications for different types of echocardiographic examination a knowledge of which should be mandatory for all those requesting such imaging and which will ease the life of the echocardiographer as well as their own

Thirdly as a reference book for echocardiographers, it is useful in daily practice as well as being an aid to teaching The tables on aetiology and differential diagnosis of cardiac conditions and lists of normal values blend well with the text and illustrations to produce a book which is well thought out informative and easy to read It is a must for hospital and departmental libraries though the cost which represents that of the faithful reproduction of the many colour and black and white images, may be considered prohibitive by the individual.

O M Howard
Clinical Services 3

Self-Assessment Colour Review of Clinical Haematology Atul B Mehta Manson Publishing (Harcourt Brace and Co Ltd) 1995 Pp 160 £14 95

One of the many joys of clinical haematology is the need to combine clinical acumen data interpretation and the examination of blood and bone marrow in deducing a diagnosis Developing an integrated approach to clinical problem solving takes practice and books such as this provide a valuable resource This slim volume combines high quality clinical photographs informative data and well reproduced micro photographs to exercise and develop all aspects of haematological diagnosis Sensibly the answers are given over the page rather than collected at the back of the book which prevents inadvertent cheating and these answers include further relevant illustrations and data as well as concise and informative discussion The reviewer was encouraged to find most of the puzzles to be soluble and was impressed by the amount of information that was presented Candidates for the MRCP have persistent and understandable concerns about haematology data and slide interpretation in the exam This book covers most of the important conditions and would admirably prepare candidates It would, of course be of interest to anyone who feels the need to improve their knowledge and would be suitable if testing for medical students as well as those who have wisely chosen haematology as their career Highly recommended

C M James
Consultant Haematologist
RNH Haslar

Systematic Reviews Eds Iain Chalmers and Douglas G Altman BMJ Publishing Group April 1995 Pp 118 UK £14 95 Overseas £17 00

Over two million articles are published annually in the biomedical literature in some 20 000 journals There is an essential need to reduce this mountain of information to digestible amounts Reviews are required to provide summary information to assist decisions on health policy and patient treatment

The report of a systematic review is similar to a research paper in that it contains clear descriptions of the aims of the review and the materials and methods adopted by the reviewer Reviewers who fail to apply scientific principles to their tasks can provide dubious advice to colleagues with potentially disastrous consequences This book is a collection of papers by leading practitioners of the science of reviewing health care research The eight chapters (95 pages) cover the following topics

Rationale and examples of systematic reviews

Identification of relevant studies for systematic review

The statistical synthesis of data from similar studies

Guidelines for assessing reviews

Reporting updating and correcting systematic reviews

Bibliography on the science of reviewing research

The book also presents the results of particular searches made starting with Medline and suggests how searches can improve information retrieval of randomised clinical trials from Medline

The bibliography will continue to be developed and refined by contributors to the Cochrane Collaboration — an international network for individuals and institutions Updated versions will be available on disk with The Cochrane Database of Systematic Reviews and they will also be accessible through Internet

R J Pethybridge
Head Statistician
Institute of Naval Medicine

Statistics in Clinical Practice David Coggon BMJ Publishing Group August 1995 Pp 128 Uk $10 95 Overseas £12 95

Doctors and medical students will find statistics (numbers graphs methods) are universally presented at meetings and in journals Basic descriptive information can usually be understood but statistical inference can present problems Doctors do not need to know the mathematical processes behind analyses but they do have to make some judgements on the design and conduct of studies as well as being aware of some statistical terms (e g statistical significance power sensitivity) in use

This book (nine chapters covering 103 pages) explains in simple terms the basic principles to aid the understanding of how statistics are used in medicine The topics include types of data summarising univariate bivariate and multivariate data probability hypothesis testing confidence intervals statistical power and selection of samples and interpretation of statistical analyses Examples from different specialties are used to support the principles There are a few questions at the end of each chapter with answers at the back of the book Formulae are not used in the book

Doctors should benefit from reading this book as shortcomings in study methods used should be more recognizable and presentation of statistical information in papers and at meetings and their ability to interpret data for the better management of patients would be improved

R J Pethybridge
Head Statistician
Institute of Naval Medicine

J roy nav med Serv 1995 81 239-240

Obituaries

Temporary Surgeon Lieutenant Commander James Murray McEwan RNVR died in Dumfries in August 1993 after a long illness. Born in Paisley in 1909 he attended Paisley Grammar School where in his final year he was awarded the coveted Gold Medal donated by the Coates Family owners of the local and world renowned thread mill. He won a bursary to the University of Glasgow where he graduated MB ChB in 1933. After some time in general practice initially in Carfin Lanarkshire and then in Rutherglen Glasgow he went to sea as a doctor on the cruising liner Montrose.

James McEwan joined the Royal Naval Volunteer Reserve on the outbreak of war. He was onboard the merchant cruiser HMS *Forfar* when she was torpedoed in the Atlantic. In 1942 he was appointed to Russia to open an Auxiliary Hospital at Vaenga on the Kola Inlet and was in charge of this until September 1943. His report of this appointment inspired a paper elsewhere in this edition. In June 1944 he crossed to Normandy by landing craft in Operation Overlord.

Having gained the Diploma in Public Health of the University of Glasgow in July 1948 he took up post as Assistant Medical Officer of Health of West Lothian with his home in Linlithgow. By the late 1950s he was Medical Officer of Health of Hexham Urban and Rural Districts and Divisional Medical Officer Western Area for Northumberland County Council. He enjoyed life and work in Hexham where he was a keen supporter of the local church, Red Cross and golf club. Some thirty years ago he married Rachel Fernie. In the late 1980s they retired to Annan.

Surgeon Lieutenant Commander John Gwyn Howell James VRD RNR who died 6 January 1995 at the age of 76 had been a consultant orthopaedic surgeon in Wales until his retirement in 1983.

Born 5 May 1919 he qualified MRCS LRCP at the Welsh National School of Medicine and joined the RNVR as a Probationary Temporary Surgeon Lieutenant in October 1942 seeing most of his war service in the Mediterranean. He was promoted Surgeon Lieutenant Commander 23 October 1950 and transferred to the Permanent List of the Royal Naval Reserve in 1959. He retired from the RNR at his own request in March 1963 and was awarded the Volunteer Reserve Decoration for 15 years' service.

Surgeon Lieutenant Commander William Vaughan Owen Royal Navy who died 1 March 1995 at the age of 84 was born on 4 January 1911 and qualified from Westminster Hospital Medical School in January 1936. Following house jobs at Westminster Hospital he joined the Royal Navy for Short Service in October 1937 with antedate of seniority to 1 March 1937. He was posted to the China Station in May 1938 firstly to HMS *Gannet* and latterly to HMS *Dorsetshire*. It was during this time that he saw action during the first Yangtze incident. He was then appointed in 1940 to HMS *Drake* for general medical duties was transferred to the Emergency List on completion of his Short Service Engagement in October 1942 and re appointed. He was promoted to Surgeon Lieutenant Commander 1 March 1943 and reverted to the Emergency List in January 1946. He was then in general practice in Swinton Manchester until his retirement to Anglesey in 1973. He is survived by his second wife Lily whom he married in 1949 his daughter Elizabeth and two grandchildren.

Principal Nursing Officer Helen Moore CBE RRC who died recently aged 89 served for 30 years in the Queen Alexandra's Royal Naval Nursing Service and was Matron in Chief from 1959 to 1962.

Trained as a nurse at St George's Hospital London she began her service career at RN Hospital Plymouth followed by the Royal Naval College Dartmouth which was then a public school for Naval Cadets. In 1938 she served at RN Hospital Malta but was invalided home with severe anaemia in 1940.

In 1941 for the next two years Helen Moore served in the hospital ship *Isle of Jersey* which ferried patients from Scapa Flow to Aberdeen and being prone to sea sickness she must have suffered in these rough waters.

During 1944 she held the war time rank of Acting Matron but after the war she returned to RN Hospital Malta as a Superintending Sister where she ran with great efficiency a busy and complicated ward. She was an excellent nurse observant and a shrewd judge of character.

After two years she returned to England and various naval hospitals taking on matron's duties in 1953 and becoming Matron in Chief in 1959 during which time the QARNNS Nursing Auxiliaries were formed and many former

VADs transferred to the new service. As Matron in Chief she was appreciated for her humanity and fairness despite a somewhat stern appearance. Those who knew her enjoyed her caustic sense of humour and pessimistic forecasts which unfortunately usually turned out to be right.

The great pleasures in Helen's life were walking long distances alone on Dartmoor the cliffs of Malta the hills of Sicily and, particularly the fells of Cumbria. Her skills as a gardener at home and abroad were much enjoyed by others. Although Helen was happy alone she also had many friends of both sexes and all ages as she was an interesting and amusing companion.

In August 1962 she retired to Penrith and shared a house with her sister and continued to create another beautiful garden to walk the fells of Cumbria for as long as she was able and then at last she could only look at them longingly seated in a car.

We have learnt of the recent death at the age of 83 of **Surgeon Commander George Clifford Denny** who entered the Royal Navy in January 1937 and retired in 1967 after 30 years service, and also of the death on 28 October 1995 of **Surgeon Rear Admiral W V Beach CB OBE** who entered the Royal Navy as a Surgeon Lieutenant in May 1928 and retired in 1963. Our sympathy is extended to the relatives of the deceased. Any personal reminiscences of these officers will be welcomed by the Editor.

Naval Medical Compassionate Fund

Whilst most of us are well aware of the necessity of providing for our families in the event of our death, medical officers may not be aware of the existence of the Naval Medical Compassionate Fund which was set up in 1915 to help widows and orphans of Naval Medical Officers in necessitous circumstances.

Serving Medical Officers wishing to join the Fund have to pay a lifetime subscription in accordance with the following table:

Age of person in years at the date Life Subscription is paid *Between*	*Female* £	*Male* £
20 and 24 years	17 85	13 65
25 and 29 years	21 00	16 80
30 and 34 years	25 20	21 00
35 and 39 years	30 45	25 20
40 and 44 years	34 65	29 40
45 and 49 years	39 90	34 65
50 and 54 years	45 15	38 85
55 and 59 years	50 40	41 10

which then entitles their widows or orphans to grants from the fund even if they die after they have left the Service.

The present Trustees pay an automatic grant of £1800 to the widow of a member as soon as the death is reported. Thereafter the fund is available should any more assistance be required.

Serving Medical Officers who are interested in joining the Fund should contact:

The Assistant Secretary
Naval Medical Compassionate Fund
Room 114
Victory Building
HM Naval Base
Portsmouth PO1 3LS

Regrettably the Fund is not open to retired or Reserve Medical Officers.

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Service News

Presentation of RN Medical Branch Ratings and Sick Berth Staff Association Annual Prize — 12 September 1995

1995 saw the introduction of an annual prize awarded by the RN Medical Branch Ratings and Sick Berth Staff Association to be presented to the Top Medical Assistant completing MA training during the previous year The recipient was MA Mark Hiskens who completed training with Iron Duke Class in April 1994

MA Hiskens now serving with SM2 was presented with the award by the Association's President Mr Jack Fitch at a ceremony held in RNMSS in the presence of Mr Harry Mitchell Secretary of the Association and Commander Geoff Marshall, Officer in Charge RNMSS

RNMS Freedom of Gosport Parade

The Royal Naval Medical Service celebrated the 25th Anniversary of receiving the Freedom of the Borough of Gosport with a parade on Monday 18 September 1995

The Freedom was bestowed in 1970 in recognition of the close relationship enjoyed by the People of Gosport and the Medical Service which had spanned more than 200 years The honour was originally proposed by Alderman C W L Giles a former Mayor of the Borough who had started work in the dispensary of RNH Haslar in 1913 eventually retiring from the Service as a Chief Steward Regrettably although making the original proposal in Council Alderman Giles never saw the fulfilment of his dream dying just two weeks before the ceremony

The Medical Director General (Naval) Surgeon Rear Admiral A Craig and Her Worship Councillor Mrs Marjorie Bailey the Mayor of Gosport took the salute at the anniversary parade Flanking the dais with members of the Borough Council were Surgeon Commodore M F W H Paine Royal Navy representing the medical service afloat Surgeon Captain (D) G W Myers Royal Navy representing the Dental Service Commander G Marshall Royal Navy represented the medical branch and the Director Naval Nursing Services Captain C M Tayler QARNNS Over 100 Officers and Ratings of the Medical and Dental Service took part representing establishments from as afar apart as HMS *Cochrane* in the north and RNAS Culdrose in the south

The Parade Commander Commander Frank Reed Royal Navy was one of the first to volunteer to take part in the parade having been present as a Probationary Medical Technician at the original ceremony 25 years previously

A most successful morning was rounded off when 60 of the participants were the guests of the Town Council at a civic reception in the Town Hall on completion of the parade In her welcoming speech the Mayor of Gosport said that she and the people of Gosport looked forward to continuing the close association between the borough and the Royal Naval Medical Service for another 25 years

The original parade with 200 members of the medical service taking part was reported in the 1971 Spring Edition of the Journal

Freedom Parade — Colour Party

Freedom Parade — Officers' platoon

Freedom Parade — Female ratings' platoon

Freedom Parade — Male ratings' platoon

A reunion of former Hong Kong Dockyard Defence Service (DRPS) took place on 20 September 1995. The occasion marked the 30th Anniversary of the organisation which started as embryonic Royal Naval Medical School and which later gained separate identity as the Naval Hospital Hong Kong Service (NKPS). The photograph showed, from left to right (and in chronological order): Surgeon Captain C O Le C Hughes OBE (November 1965 April 1969 and May 1972 November 1973) Surgeon Commander R W F Pratt (April 1969 May 1972) and Surgeon Captain J R Harrison (April 1990 July 1994) with the present head Mr J M Richards. After a tour of the DRPS facilities and a lot of talking with old colleagues the visitors were hosted for lunch by the MDG(N). The DRPS is currently earmarked to join the DERA in April 1996 but will retain its name.

RDYAL NAVAL MEDICAL AND DENTAL DFFICERS

AWARDS

Surgeon Lieutenant Commander A W Murrison has been awarded the Gilbert Blane Medal for 1994.

Surgeon Commander M S Nowson-Smith has been awarded the Erroll-Eldridge Prize for 1994 (see photograph overleaf).

Surgeon Lieutenant Commander A R Dewhurst s excellent performance in the Part 1 Examination for Fellowship of the Royal College of Anaesthetists has been recognised by the award of the College s Magill Medal.

Erroll Eldridge Prizes for 1995 have been awarded to **Surgeon Captain M R O'Connell, Surgeon Commanders W M Edmondstone, R H Taylor, R J Clark and C J Davis, and Surgeon Lieutenant Commander P M Kemp.**

Surgeon Commander Vivian Thomas Smith has been awarded the Hall Hall Medal for 1994. He is pictured receiving his cheque and the Dean of Naval Medicine's congratulations

APPOINTMENTS AND PROMOTIONS

As Surgeon Commodore
1 September 1995
and to continue in present appointment
Surgeon Captain M Mackod
Surgeon Captain D M Crean

As Consultant Adviser in Otorrhinolaryngology to Medical Director General (Naval)
30 September 1995
Surgeon Commander H J Cox

To Surgeon Lieutenant Commander (D)
J C Fenwick

To Surgeon Lieutenant
T P Collman S J Dickson S E T McCabe
H E M Ahling Smith L M Sowden
D E B Ayers M J Tennant S J Mercer

To Acting Surgeon Lieutenant
P A Anstis S A Bland S Porter S J Lane
F T Marshall R H Mather S C Reston
R J Birch S R Davies J L Denholm
S J Mackie J J Matthews R A Milner
J J Smith

CONSULTANTS, SENIOR SPECIALISTS AND SPECIALISTS

The following professional advancement is announced

Consultant
Occupational Medicine
Surgeon Lieutenant Commander A W Murrison

HIGHER QUALIFICATIONS

Surgeon Captain T H Shepherd — Master of Law
Surgeon Commander C M James — MBA
Surgeon Commander C J G McArthur — Diploma in Occupational Health
Surgeon Lieutenant Commander A J Ashworth — DIH
Surgeon Lieutenant Commander A W Murrison — MFOM
Surgeon Lieutenant Commander R D S Wylie — MRGCP
Surgeon Lieutenant Commander J M Clarke — MRCGP and DRCOG
Surgeon Lieutenant Commander J Bedford — DRCOG
Surgeon Lieutenant Commander S P Hambling — DRGOG

ATTAINMENTS OF JUNIOR DOCTORS

Surgeon Lieutenant Commander A T Dewhurst has passed FRCA Part 1
Surgeon Lieutenant S R C Smith has passed FRCS Part 1

TRANSFERS TO FULL CAREER COMMISSION

Surgeon Lieutenant Commanders C R M Foster
J E Risdall
Surgeon Lieutenants S W S Millar S M Telfam

NEW ENTRIES

Surgeon Lieutenants (D) B S Smith
P R McKerkindale K E Nurton
P D Woodhouse
Surgeon Sub Lieutenants A S Christopher
A J R Cormack M P Prendergast G C Evans
A M Nelstrop Victoria J Price A D Miller
S J Barton D J E Kershaw
Surgeon Snb Lieutenants (D) W B O Chittick
K H Taylor

PLACED ON EMERGENCY LIST

Surgeon Lieutenant Commanders J W B Ross
S B Nimmo M S L Glavon D C Mackay
Surgeon Lieutenant Commanders (D) N Wilkie
C R D Fox B J Pearson
Surgeon Lieutenant (D) J P McVeigh,
S J Wolstencroft

RETIREMENTS

Surgeon Captain A P Steele-Perkins
Surgeon Commanders P H Hardy R T Jolly
D W Somerville J A Bakhai M J Fox
R J N Garth J C D Turner J I C Hogg
Surgeon Commander (D) P G Edwards
Surgeon Lieutenant Commanders P M Kemp
G M Barker

NEWS OF RETIRED OFFICERS

Surgeon Captain (D) T J C Hall OBE has passed MOrth RCS(Edin)

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

All change for QARNNS

On the advice of the Navy Board Her Majesty has agreed that from 3 September 1995 all QARNNS and QARNNS(R) nursing officers will assume RN titles and badges of rank

The new ranks are as follows

Principal Nursing Officer (PNO) Captain QARNNS
Chief Nursing Officer (CNO) Commander QARNNS
Superintending Nursing Officer (Supt NO/Supt NO(R)) Lieutenant Commander QARNNS/QARNNS(R)
Senior Nursing Officer (SNO/SNO(R)) Lieutenant QARNNS/QARNNS(R)
Nursing Officer (NO/NO(R)) Sub Lieutenant QARNNS/QARNNS(R)

No other terms and conditions of service are affected by this change

AWARDS

The Ruth Carter Prize for Nurses for 1995 has been awarded to **Leading Naval Nurse N B Howding** for her research into *Blood Glucose Monitoring of the Diabetic Patient*

APPOINTMENTS AND PROMOTIONS

To Lieutenant
A S Charnock

HIGHER QUALIFICATIONS

Lieutenant C M A Doughty — BA(Hons) Nursing with Education
Lieutenant A Dobson — MA(Ed) Health Promotion

COMMISSIONS TERMINATED

Lieutenants E A Pickering S J Parry
R Norton

RETIREMENTS

Captain J Massey RRC
Commander C M Poole
Lieutenant Commander H R M Schofield

MEDICAL SERVICES

Lieutenant Commander J R Dalgleish RN will Navy who was recently awarded a PhD at Newcastle University

AWARDS

The Sick Berth Petty Officer's Efficiency Medal for 1994 has been awarded to **Petty Officer Medical Assistant A Davies**

NEW YEARS HONOURS 1996

Member of the Order of the British Empire
Surgeon Lieutenant Commander P M Kemp
Lieutenant (MS) M E B Genevieve

Associate of the Royal Red Cross
Warrant Officer Naval Nurse A Byrne
Acting Chief Petty Officer Naval Nurse E Hayward

Many of our readers will be pleased to learn that Mrs **Georgina Young** who has worked in the Secretarial Department at the Institute of Naval Medicine for a number of years has been awarded an MBE in this year's New Year Honours

APPOINTMENTS AND PROMOTIONS

To Commander
E G Bastland

NEW ENTRY
Sub Lieutenant D C Folbington

RETIREMENTS
Lieutenants J Hurry M E B Genevieve
I H Bennett

ROYAL NAVAL RESERVE

NEW ENTRY
Probationary Acting Surgeon Lieutenant
J A Seaton — *Sherwood*

RESIGNATIONS
Surgeon Lieutenant Commander Janis A Burkett — *King Alfred*
Surgeon Lieutenant Commander C Thompson — *Northwood*
Probationary Surgeon Lieutenant T G Cobain

RETIREMENTS
Surgeon Captain T A Waterford RD* — *Forward*
Surgeon Commander P L Jones — *Cambria*
Surgeon Lieutenant Commander N J B Garbutt — *Flying Fox*
Surgeon Lieutenant Commander D G Hughes — *Flying Fox*
Surgeon Lieutenant Commander A M A Taylor — *King Alfred*